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# EVERYBODY'S MAGAZINE

FOR JUNE.

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IN CAESAR'S PALACE.

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EVERYBODY'S MAGAZINE

JUNE, 1900.

# ELECTRICITY AND SOME OTHER PUZZLES.

*BEING No. 6 OF THE SERIES "SIMPLE EXPLANATIONS."*

BY GEORGE HOUGH.

*This is a Simple Explanation that cannot explain. There is no answer known for the problems presented. But as an explanation of certain theories it may perhaps properly be included in the series.*

WITHOUT going into the question of man's age on earth—whether it be six thousand or six million years—there must have been some time in his history when, having (for the time being) solved the primal question, "What shall I eat?" he had leisure to look about him and inquire into other matters. And of the questions which he asked himself and Nature, these must have been among the very first:

What are the stars?

What is fire?

What is light?

What is heat?

What is (that which we call) gravitation? And of late years, beginning only some two thousand years ago—

"What is electricity?"

Now it is an interesting commentary on our boasted success in the cross-examination of Nature, that after thousands of years of recorded study, and nobody knows how many other thousands of which there is no record, *we cannot answer one of these questions to-day*, except in phrases that begin, "It is believed that—" or, "*This much* we know." Of course I speak of a direct answer to a direct question—we have learned almost everything about these things except the nature of them—but in this year of grace, 1900, the ablest physicist upon earth cannot tell you, for example, *why* his glasses fall to the floor if he drop them, any better than the first savage to whom the question occurred could tell why his club fell when he lost his grip on it.

Imagine a scientist of to-day, confined to simple and positive answers, undergoing cross-examination by a ten-year-old boy. The record would read about like this:

*Q.* What are the stars? *A.* (glibly). Other worlds like ours in different stages of heat and development. *Q.* How did they get there? *A.* I don't know. *Q.* What keeps them there? *A.* The laws of inertia and gravitation. *Q.* What is gravitation? *A.* The attraction of one body on another. *Q.* Why should they attract each other? *A.* I don't know.

Satisfactory answers? Not very, and yet that particular subject may be handled with comparative confidence. We have learned much about the stars. That is, we know their general make-up and their time schedule and can tell one from another. So might a child, from observation, learn to recognize the locomotives and fathom the time-table of a railroad. Beyond this, not even the depth of space is deeper than our ignorance of the stars.

Let the examination go on.

*Q.* What is fire? *A.* Combustion, or the evidence of it. *Q.* What is combustion? *A.* The

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rapid combination of oxygen with carbon, or other substances. *Q.* Why should they combine, and what makes them combine? *A.* I don't know.

*Q.* What is light? *A.* (with renewed confidence). The sensation produced by a certain wave motion in the ether. *Q.* What is the ether? *A.* I don't know.

*Q.* What is heat? *A.* The energy of molecular motion. Q. What do you mean? *A.* Well, I can't answer much better than that in a few words; heat, as you mean it, is the result of an acceleration of the normal motion of the molecules of a substance. *Q.* Why? *A.* I don't know *why*, it just *is*, it's a natural law. The heat you feel from a fire is radiated through the ether. *Q.* What is—? *A.* (interrupting). I don't know how it is radiated, and I don't know what the ether is.

*Q.* What is electricity? *A.* (desperately). I don't know—maybe a form of matter; maybe a form of motion; maybe a condition of molecular arrangement; maybe a condition of ether stress. I don't know what it is. Go away and don't bother me. I'm writing a book about it.

Note in the above the free-and-easy use of *definitions* and the absolute absence of *explanation*. As a matter of fact, we can answer about all the questions that can be asked on these subjects, except the questions, "What are they?" and "Why are they?" We have analyzed and weighed the stars. We have measured heat. We have timed light. We have figured to an ounce and an inch the force of gravitation. We have reduced the elusive mysteries of the electric current to the flippant formula $C = \frac{E}{R}$. But we have reached the actual bottom facts of none of these, although it is believed that they will eventually be learned.

Man has been studying electricity for about two thousand five hundred years, although in rather a desultory fasnion until the last century. We have learned more in the last seventy-five years than in the preceding two thousand four hundred.

Now, a subject that has been studied for a hundred years (to say nothing of two thousand) is not a subject to be treated exhaustively in a magazine article. But there are certain prominent facts that can be reviewed and a theory or two outlined, and really that is all that any treatise could do.

Place on a table a glass tumbler, and on that, a metal tray. On the varnished surface of the table lay a sheet of writing paper. Hold it by a corner with the fingers of the left hand and stroke it swifty from left to right with a piece of cork. Be sure that all these articles are perfectly dry.

After a few strokes lift the paper from the table. It clings closely to it—you must use some force. Drop the paper into the tray. It falls as if it were of considerable weight. You have now an apparatus with which you can perform many simple electrical experiments. There is not space to give them here. Approach your finger to the tray—a spark jumps to it with its characteristic "snap." The tray is highly electrified. Whence did the force come? From the paper, of course; but how did the paper get it? Neither it nor the cork was electrified before you began rubbing. The electricity thereof, therefore, must have come *from the rubbing*. Try rubbing the paper with another piece of the same kind. You get little or no effect. Try rubbing two corks; you get no effect. You must rub *dissimilar* substances.

Now fill your tumbler with water, pour in a teaspoonful of sulphuric acid or a heaping tablespoonful of common salt, and drop into the liquid two silver spoons. (If you use the sulphuric solution you must be prepared to clean the spoons when you are through.) Two strips of copper will answer as well if at hand. Attach a wire to each spoon or each strip, keep the latter separated in the liquid, and place the two wires close together (but not in contact) on the tip of your tongue. You can taste nothing. Now substitute for *one* of the spoons or strips a strip of zinc, also with its wire. Now place the ends of the wires on the tongue, as before. You get at once a very peculiar sensation—a sort of pungent, metallic taste, probably accompanied by a faint flash of light in the eyes. What you "taste" is the effect of the passing of an electric current, your tongue being rather a delicate instrument for detecting such currents. You did not get it when two similar substances were used; you do get it with two dissimilar substances. Note the parallel with the experiment above.

Take a copper wire and an iron wire

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and twist an end of each together. Put the twisted junction into a gas flame and put the other two ends on the tongue. You will probably taste the current again; possibly not, for it is very weak; but a more sensitive instrument would show that one was passing. Try two copper wires or two iron wires so twisted. No result. Again the necessity for the employment of *dissimilar* substances.*

Now these three methods — friction, chemical action, and heat action—are the only methods known of producing electricity, with one exception, that of induction, as in a dynamo, which really depends on exactly the same fundamental theory, but is too involved to be taken up here. Note in each case that electricity comes only when dissimilar substances or opposing influences are brought in contact. What happens then? What *is* electricity?

As has been stated, nobody really knows, but there is a general theory, which is roughly indicated in these experiments. It is supposed that an electric current is the result of an effort of Nature to readjust disturbed molecular conditions.

That is a sounding sentence and reads with ponderous gravity. It is probably entirely incomprehensible to the unscientific reader. To try to make it plain, we must dive deeper yet into the secrets of Nature; in fact, to the very bottom thereof—down to ultimate atoms and the atomic and molecular theories.

This is the atomic theory of matter, put rather crudely for the sake of plainness: All matter is composed of atoms clinging together in the form of molecules. An atom is the smallest possible division of matter. It is matter divided so finely that another division will destroy it. This is a hard thing to conceive, and, in fact, Spencer has pointed out that it is inconceivable; no one can imagine a thing so small that it cannot be split up still further. A drop of water may be separated into a hundred parts; each part will be a drop of water still. Carry on the separation further in your mind, and you may be able to conceive of a point where the next division will actually split up the drop into its component parts of hydrogen and oxygen. At that point you have what is called a "molecule" of water, consisting of one atom of hydrogen and two atoms of oxygen. The next division tears these apart, and you have the free atoms of the two gases; the water has been destroyed *as water*, and the division of *the water* can go no further. But why cannot the atoms be still further cut up into smaller atoms? That is what Spencer asked and what no one has been able to answer until the "vortex ring" theory was evolved.

A "vortex ring" is the sort of thing that a man makes with cigar smoke; you often see it in the first strong puffs from a locomotive smoke stack, when the train is starting. It is a ring that has a swift twisting motion—continually turning itself inside out, as it were. It isn't made out of anything; it is just a form of motion in the air, but it has some very strange properties—it shows evidence of many of the properties of *matter*. It has inertia, it has attraction, it has elasticity. One such ring will attract another, and if two bump together they *vibrate*, just as the rim of a bell vibrates when struck.

Now it is supposed that an atom may be such a vortex ring, a ring unimaginably tiny, and you can see that when you get down to that ring you cannot cut it any further without destroying it.

Now imagine a bottle full of hydrogen gas, a gas composed of atoms of hydrogen in the form of unnumbered millions of these vortex rings, twisting away as they have done since the beginning and will do until the end. We won't ask what started the motion, nor what keeps it up; just imagine it and you will do all that the scientist can do, except believe it also, as he does. This atom is never at rest; it is not only twisting, it is also *vibrating* in

* Lest I be called to account by some scientific reader, I hasten to modify the preceding statement by admitting that the same substance *under dissimilar stresses* may give rise to thermal currents. But the general principle is not involved in this, and this article is not intended for scientific readers, anyway. It is impossible and unnecessary, in the limits of the prescribed space and conditions herein, to attempt subtle distinctions and great refinement of illustration or statement.

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some characteristic way of its own. Moreover, it is always *travelling bodily* at a terrific speed—believed to exceed a mile in a second—travelling forward in a straight line until it bumps against another atom like it, or against the sides of the bottle, then it rebounds vigorously and continues until it gets another bump.

Now we will suppose that there is introduced into this bottle of hydrogen a quantity of oxygen, also composed of atoms of the same general description, also vibrating at a characteristic rate and bumping each other about. The gases will mix; that is, the atoms will fly about between each other. Next occurs that strange thing called chemical affinity, one of the foundation stones of physics, and as incomprehensible as most of the others. Nobody knows why some atoms have such a strong attraction for each other and appear indifferent to other atoms, but it is the fact. As good a theory as any, perhaps, is that their relative rate of vibration may have something to do with it. Two or more atoms whose vibrations are "in tune," so to speak, may attract each other and, in combination, form a sort of material chord. Whatever the reason, if given an opportunity, each atom of hydrogen will attract to itself two atoms of oxygen, and the three cling together as a molecule. Then—presto, bang!—the hydrogen and oxygen vanish, as gases, and there is water.

It is supposed that all matter is made up in such a way. Some are simple elements, consisting of atoms only; some are composed of molecules, which are made up of anywhere from two to hundreds of adhering atoms of different kinds. After they unite as a molecule they continue to vibrate as before, although not with the same freedom, perhaps. And each has, consequently, a certain, definite, characteristic rate of molecular vibration, different for all substances.

Now putting two dissimilar substances in contact is going to make trouble for the molecules in each. Because, as the rate of vibration is different, they interfere with each other. Touch together the rims of two bells which are sounding different notes. There is a jangle—and silence. The vibration of each has killed the vibration of the other. A molecular vibration cannot be stopped so easily, but there is a readjustment of conditions, and a result of that readjustment is (thought to be) what we call electricity.

This is only a theory, of course, and one that is weak in more than one spot, none too easy to understand, and one that probably is denied in toto by many physicists.

Another theory is that friction and heat and chemical action produce molecular "stresses;" that is, strained and unnatural relations among molecules, and that these stresses are transmitted by the ether or through the ether. But this, to any ordinary mind, appears to be only a slight variation of the other idea. All agree that molecular motion is at the bottom of the phenomenon, either as a cause or as an indispensable accompaniment.

That's enough for theories and things we do not know. Now for some things we do know, and easier reading.

The electricity that exists in the paper on the tray in our first experiment is called "static"—it is electricity at rest. Think of a tank filled with water at the top of a building. The water is at rest, but it represents a lot of stored-up power. Give it an outlet and it will burst forth with violence. When the little spark jumps from your tray it is as if the bottom had dropped out of the tank. Almost all the stored force is gone with a rush.

This "static" electricity is that of lightning; it is also the kind that sometimes enables you to see sparks when you rub a cat's fur. It is the sort that in crisp, dry weather makes a woman's hair cling to the comb. It is not a form of electricity that has yet been trained to do much work for mankind. It is under great pressure, and hard to control.

The commonest form of this strange force is that which used to be known as "voltaic;" it is electricity in motion, to use a popular expression. Instead of the water in a tank, the analogy is of a steady flow of water through a pipe. As a matter of fact, these names, analogies,

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and distinctions are all more or less misleading, for later investigation tends to show that there is no such thing as a "current" of electricity in a wire, and that there is no difference in kind, and little difference in character, between the "static" and "voltaic" electricities; they are one and the same thing. But old names, and especially old analogies, die hard, and the illustration of water in a pipe is too easy and comprehensive to abandon lightly.

Imagine a small pump that is continually forcing a small, swift stream of water through a circuit of pipe. The pump will represent a battery or a dynamo, and the pipe the wire of a circuit. Suppose a valve in this pipe to be suddenly closed. The water ceases to circulate. The continuous channel for the passage of the water in the interior of the pipe has been broken by the interposition of the valve. So, when a metallic circuit is broken, the current ceases at once in all portions of it, for the continuous metal path has been broken by a little air space.

If the pipe be a very small one, the pump must have more power to force the water through it than if it were a large one. So, if the wire in our electric circuit be a very small one, there must be more power in the battery to push the current through it.

If the water in the pipe be allowed to flow for a while and then suddenly checked with a shut valve, there is a considerable shock. Sometimes a water pipe may be burst by the sudden check to the flow. So, if a current in a wire he allowed to flow and then the circuit is suddenly broken, there is a "push" at the ends of the break that may force a spark across the gap. The ordinary gas-lighting appliance works this principle practically.

Now all these features of pressure and power and flow have been figured out accurately by electricians, and their laws determined. As they were dealing with absolutely new forces and new conditions, it was necessary to find new names and new units of measurement. Consequently you will see in ever-increasing use in daily prints and hear in casual conversation such terms as "ohm," "ampere," "volt," and "watt." There are others, but these are the most used.

We have seen that it takes some power to force water through a pipe and electricity through a wire. The amount of "resistance" offered by a circuit to the passage of a current is measured in *ohms*. Ohm was a German who did much in research, and his name has been immortalized in this way. There is nothing in everyday weights or measures to compare with the ohm. It is the unit of electrical friction, so to speak.

The amount of force or pressure of a current is measured in "volts," a name derived from Volta's. An engineer might say that the pressure on his boiler was so many pounds to the square inch. An electrician would say that his dynamo or battery was delivering current at so many "volts." The voltage on a street-railway circuit is about 500. The voltage of an ordinary battery, such as is used to ring house-bells, is perhaps 3 to 4.

The unit of volume is the "ampere;" named from a French physicist. It corresponds to the flow of water in a pipe, and refers to the quantity of current that is being pumped through the wire. This quantity or volume of electricity in a wire depends, exactly as the flow of water in a pipe would, upon the pressure that is back of it, and the resistance offered to its passage. The higher the pressure, or the less the resistance, the greater the flow. The formula that expresses this law mathematically is $C = \frac{E}{R}$; that is, that the current (in amperes) is found by dividing the electric pressure (in volts) by the resistance or friction (in ohms). That is what is known as "Ohm's law," one of the most exact laws in all physics.

A toy steam boiler may have just as high a *pressure* in it as that of a mighty steamship, but it won't do the same work, because it can't give the same quantity of steam. So, with a battery or a dynamo, the mere pressure it produces is not in itself a proof of the work it can do. The work or actual power depends on the

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pressure *and* the quantity in combination. So if we multiply the pressure, in volts, by the volume, in amperes, we get something that exactly represents the power being furnished. It is measured in "watts," and is the unit of electrical work, as "horse-power" is the unit of work in a steam engine.

So you see, as stated, we know much about electricity, so far as using it is concerned. It is only when we get down to the bottom fact, "*What is it?*" that we have to answer, "I don't know."

Well, when you get to the bottom of things, what *do* we know? We have acquired a fair working control over the working laws of most natural phenomena, but that's all. The secret, underlying, vital *principle* is as yet uncomprehended, if indeed it is comprehensible at all to our present intelligence. Any child knows that there is a law against theft—what does he know of the sociological principles that underlie the law? And so we recognize, use, and obey most natural laws without in the least comprehending *why* they are laws.

Any physician will tell you that aconite "slows down" the heart and that alcohol quickens it. Ask him *why* they do;—better use the telephone. Any engineer will tell you that water boils at 212 degrees Fahrenheit. Ask him *why* it does. He may be able to give a reply to this, but it will involve "critical temperatures" and "molecular free-paths," and your next question will shut him up. Any farmer will tell you the exact day of the proper month when one may plant corn with a reasonable expectation of getting a crop. Ask him *why* plants grow from seed, and see what physical explanation he can advance for the commonest and most wonderful phenomenon of all.

And so, when scientists confess "we do not know what electricity is, but we can use it," they say only what the engineer, the physician, the chemist, the iron founder, the farmer—any one who depends for a living on the workings of purely natural laws—can say of the physical phenomenon in which he is most interested.

We are getting closer and closer every year to the foundation of things.

Note, in the reference to other unsolved problems than the electric, how frequently the words "the ether" and "molecular motion" occur. Heat, gravitation, light, combustion, magnetism, electricity—while not explained—all involve in the attempt at explanation hypotheses that include the use of one or the other or both of these phrases. It is by no mere coincidence that all these widely differing phenomena appear to have something in common. There are no mere coincidences or accidents in natural laws. Consequently, instead of there being six problems in the six phenomena, there is every reason to believe that there are but two—those involved in the motion of molecules and the nature of the ether. When we solve these two, we shall solve all the others—if our present hypotheses are right. As a matter of fact, scientists do not hesitate to assert, in language as positive as scientists dare use until they have a *proof* back of a statement, that electricity, light, and magnetism are different manifestations of one and the same thing, or different forms of the same force. And they believe, without asserting, that gravitation is a member of the same family, if not, indeed, the same force under still another disguise.

All this is to show that mankind is still groping after the bottom facts in Nature, and that the further he probes the closer together he finds the different phenomena drawing. So a genealogist might follow back a family history; raking in musty records, finding his trail grow fainter and fainter as he goes, but gradually tracing to a common ancestor people who, at the beginning, had, so far as they knew, no relationship. It may be that all natural phenomena will be eventually traced to a single, primal, all-embracing Cause; and if that is ever done Man will have little left to learn of either life or death or theology.

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It was when I was about fourteen that misfortune after misfortune suddenly befell our family and overwhelmed it.

Father had inherited a fine business and had always been a rich man. We had a lovely house and carriages and horses, and there was nothing in the world within reason that I wanted and did not get. You see I was an only child, and the wonder is I was not utterly spoiled; perhaps I was.

Then suddenly everything fell to pieces. Father had taken a foreigner into partnership, and he proved to be a poor man of business and a bad man in every way. He speculated and lost his own money, and then robbed the firm, until one day father came home and told mother as gently as he could that he was ruined.

Somehow for days father had looked worried and we feared trouble. But we never guessed how bad it would be. It killed father, and his death killed my mother; and so I was left quite poor and with but one single relative in the whole world.

Auntie Emma was father's sister. She was much, much younger than he was. She came to me when mother died, and after the funeral she took me away to live with her.

Her money had been in the business, and was nearly all lost. She had, however, just a little invested outside, and she was able to take a small cottage in a little village called Amhurst, with a nice garden and a big field, where we started a dairy and poultry farm.

Auntie Emma was the dearest, sweetest aunt a girl ever had. She was pretty, too; far more beautiful than she would admit. Perhaps it was because of me that she always tried to make herself out much more ancient than she was. After all, she was only thirteen years older than I, so that when I came of age she was just thirty-four. But you would have taken her for fifty-four by her manner. She was so quiet, so gentle, so very wise and thoughtful for others. Everybody in the village seemed to come to Auntie when they were in trouble.

She had brown hair, which she tried to keep quite flat and prim. Yet it would straggle out so that, when the sun caught it, thousands of little ends and unruly hairs gleamed like threads of gold. She had lovely, dark blue eyes, and a mouth that

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—oh, even I, a girl, loved kissing that mouth.

She was just like an old maid in her ways, or pretended to be, so that I never thought of Auntie as anything else but an old maid. She tried, you see, to think it herself, and taught me to think it. The greatest object of her life was to provide for me and make me happy. I was not half appreciative enough. Perhaps that was impossible seeing that she loved me so.

One thing troubled her, and that was that I had no prospect of getting married. Auntie was not a bit of a matchmaker, but she said often and often that she wanted to see me happily wedded in case she died.

"But you won't die, Auntie. You're not to think of such a thing; you're not to talk of such a thing."

"I'm growing old, Katie. Oh, I am, dear; and there's no one here I should like to see fall in love with you."

"And if there were he'd fall in love with you, Auntie. You're much wiser, and better, and prettier than I am."

She looked quite scared when I said this.

"With me! Oh, Katie, you mustn't say such things. Men don't fall in love with an old maid when there's a sweet young girl like you at hand."

It was quite true about our knowing no one. In a way we knew every one in the village. That was because Auntie was always going about among the cottages. I often used to tease her because of the eggs which ought, according to business, to have gone to London, but which went in her big basket for old Peter, or kind old Mrs. McTosh, or the little girl over by the bridge who was dying of consumption.

DOWN CLAYFIELD HILL I ACTUALLY COASTED, BUT I GUESSED NO ONE WOULD BE LIKELY TO SEE ME.

But we had no social friends. I do not think we were stuck-up or proud, but you see we had been used to knowing such nice people that we could not take an interest in the village shop people; and the big people around took no interest in us. I knew the Squire's wife and daughters by sight, and the Langdons, and the Martyns, and the Fletchers. But they never knew me when by chance they rode over on their bicycles or drove over. Mrs. Blassant, the vicar's wife, was too friendly with the grand folks to have much time to do more than give Auntie or me a sort of nod when she saw us—which was not always.

The biggest landowner in the district—the whole village belonged to him—was Lord Selwern. He had a lovely house about six miles off, and hundreds and hundreds of acres of land.

He was the lord of the manor and a tremendous swell. He hardly ever came near the Hall. He had other places in different parts of England which he preferred. Besides, he lived a great deal abroad. Of course I had heard of him,

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though I had never seen him. I only knew that he was no longer young, and was still unmarried. That was why, whenever he did come to the Hall, all the big houses round filled, and there were dances and dinners that Lord Selwern was expected to attend.

I owned a bicycle, or rather Auntie and I owned it between us. It took us a long time to save up for it. We put by so much each week, and at last had collected sufficient. Then we started to save up for a second one.

At the very outset I tried to learn all about our machine. I made the man in the shop show me how to take off the tires, and how to mend them, and I made him tell me the meaning of every bolt and nut until, what with his telling and my practice, I became quite an expert. It was necessary to learn this because we could not afford to be always paying to have little things done to the machine which I could easily do myself. Yet it was all through my having had these lessons that the greatest event of our lives came to happen.

It was in the summer toward the end of June. It was a most exquisite morning. I was out for a ride on the bicycle. The roads were just lovely, for during the night there had been a shower. Down Clayfield Hill I actually coasted, but I guessed no one would be likely to see me. It was a narrow escape, however, for some one very nearly did.

I had reached the bottom, and had commenced pedalling again, when, on rounding the bend, I saw a man standing by the side of the road with his bicycle leaning against a milestone (it was four miles to Salford and five to Amhurst).

As I came closer I could see that he was a tall man, with a big mustache that looked a little gray, while his face was brown and tanned. He was wearing a brown knickerbocker suit with a Norfolk jacket. I went really quite slowly because he was clearly a stranger and a gentleman, and, besides, I had to peep at him in bits so that he could not perceive that I was looking at him. I could quite well see, however, that the front tire had been punctured, and that he had, moreover, no idea of how to mend it.

Then I did a thing I don't think I should have done unless I had seen that the mustache was quite gray, and that the stranger was obviously a gentleman. I pulled up just as I passed him, and I spoke to him. He did seem so helpless.

"Can I help you?" I asked.

There was a quick look of surprise on his face, which his good manners at once hid, and he drew himself up. He looked so tall and big, that the idea of a girl making such an offer seemed to me for the moment so ridiculous and so forward that I grew crimson. I could feel myself blushing. Then, at almost the same moment, came the thought that I was quite right to make the offer because he wanted help and I could give it. At the same moment, too (you see it all took place in a few seconds, while I was asking my question and he was looking at me and getting ready to reply), a look of amusement came into his eyes, and under the great mustache I saw the glimmer of a smile. Then he spoke, and his voice was so deep and gruff that I almost started.

"Help me, eh? Well, now, 'pon my word, it's—it's ridiculous my thinking of troubling you; but this infer—I—er—this front tire has collapsed, and I—er—well, really, you know, I can't think of troubling a lady."

"Oh, it won't take five minutes. It's only a thorn I suspect."

"Ah—er—yes, possibly. But—I—er—I don't understand the—er—art of mending the wretched thing. I'll learn this afternoon; 'pon my word, I'll make my man explain it this afternoon."

"Meanwhile shall I——"

"No—no. But—er—I'm helpless. I—er—suppose you tell me what must be done, and I—er—I will carry out the instructions. That's to say, if you can spare the time."

"Oh, yes, I'm quite sure, and it won't take five minutes."

"Well—er—what must I do by way of a start."

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"Turn the machine upside down."

"Ah—er—certainly," he said, and he gripped the machine. I could see he was going to make a mess of it, but I said nothing. I knew he was going to be fussy, and—well, I was enjoying the superior knowledge I had over this fine gentleman. I thought his manner of talking was affected, and I wanted him to come down off his high horse.

He did make a mess of turning his bicycle over. The front wheel swerved and the handle-bar hit him on the head. Then the hind wheel grazed the milestone, and the crank spun round and hit him on the shin. He was all dusty and hot in a moment. And suddenly the bicycle flopped down, luckily on to the soft grass of the ditch.

At last, however, he had it resting on the saddle and the handle-bar.

"Now unscrew the valve—see just there."

This he did, and then I tried to tell him how to take off the tire. It was a wired-on one, and he pinched his fingers, and nearly bent the rim before he would admit himself beaten or let me try. At last he consented.

It was a nasty tire, but I got it off, and then we set to work to find the puncture.

"Blow it up," I said, or, rather, I commanded, for I had now taken entire charge. "Screw up the valve. That's it."

"Er—how does this wretched affair come to pieces?" he asked, tugging at the pump.

I told him. It was obvious he knew nothing but how to ride. It was a lovely machine, too; I had never seen so fine a one. It was kept well—nearly as well as Auntie's and my machine.

At last we found the hole, and I got my mending outfit, and put on a patch. He would help.

"I'll do the sticky part. 'Pon my word, it's too good of you—the trouble you have taken. I'm not going to let you mess yourself."

I could have stuck it much better and quicker myself, and he wasted a dreadful lot of my tube. But I had to give in. Considering that he was a great big man, and I a bit of a girl, I thought he had been very obedient.

It was a proud moment when I had got the inner tube back, and the tire once more in place and blown up. It held without a sign of leakage.

"'Pon my word, marvellous! I—er—I can never thank you enough. Now I must set the affair on its legs, so to speak."

He was frightened of the machine, like a boy of a kicking horse. I could not help laughing as he struggled with it. It was rude, and I apologized, but he laughed himself.

I picked up my machine while he was trying to dust himself (he ran to assist me), and I turned to go.

"I—er—" he commenced, and I realized that the affectation was just as much a sort of nervousness as anything else, "I—er—are you, er—going—er——"

"I'm going to Amhurst," I said.

"I—er—may I—er, accompany you? I—er—was just taking a spin more or less—er—in that direction."

Of course I had to say yes, and presently, as we rode along—it seemed too hot now to go fast—we began chatting as if we had known each other for ever so long, instead of still being ignorant of each other's names. He knew my name, however, and all about me and Auntie before we reached Amhurst, and somehow without telling me a bit about himself.

As we reached the cottage I wondered if I ought to ask him in. Of course, if he had helped me out of an awkward predicament I might have had reason; but his case was exactly the opposite. However, he never gave me much chance of deciding for myself. He seemed quite at ease, and years and years older than me, and he quite took charge.

"I—er—I'm coming in if—er—you will permit. I—er—a glass of milk. Would you mind?"

So he came in; and in the passage we met Auntie. I suppose she ought to have had an apron on, and a sun-bonnet, and all that sort of thing, but she had not.

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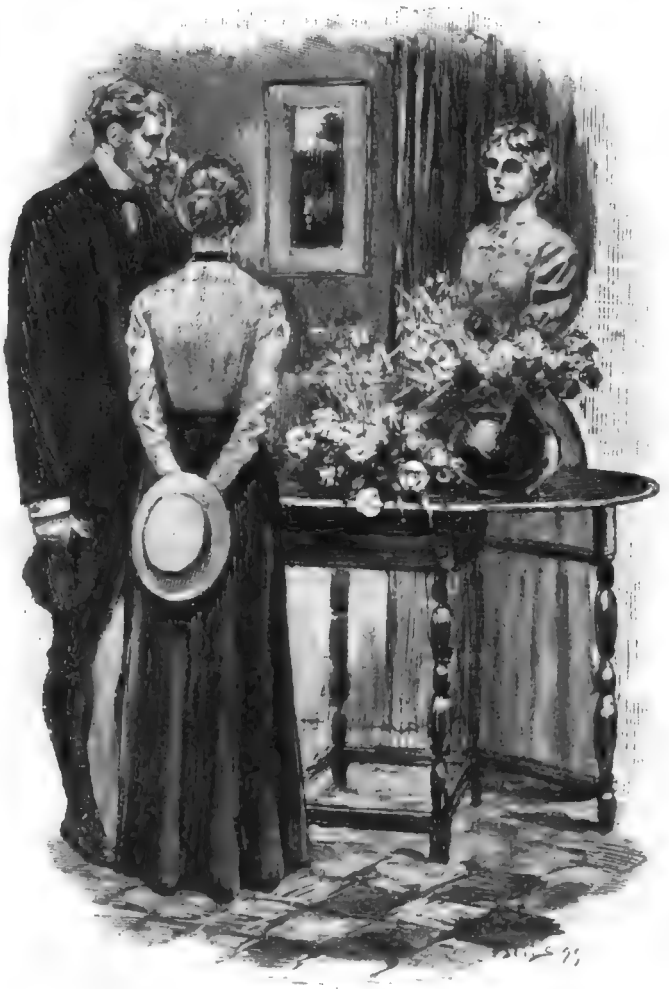
She had been in the garden, and held a few flowers in her hand. She blushed as she saw my companion. Tall gentlemen were unusual visitors. She did not know it, either, but she just looked sweet.

"I—er—owe your niece a debt of gratitude for—er—mending my bicycle for me; and I—er—have called to beg a glass of milk."



"I—ER—FANCY I SHALL TURN OVER A NEW LEAF," HE SAID.

"Won't you come into the drawing-room—" Auntie paused suddenly, for she was ignorant of my friend's name.

"I'm—I'm Lord Selwern," he said. "I—er—I'm a great culprit, being so seldom in these parts. I—er—fancy I shall turn over a new leaf," he said, glancing at me and tugging at his mustache.

I was red, oh, I know I was, not merely because he glanced at me as though I was the reason of his new determination, but for sheer astonishment at his identity. It was Lord Selwern whom I had been ordering about! And here he was going to drink milk in our cottage, which was much too humble a spot for his snobby neighbors to visit!

I ran and fetched the milk, and when I came in Auntie and he were laughing and talking together, and he was telling her all about the tire.

When he went he was very nice in all he said, though we never expected to see him again. But we did. He came often and made Auntie and me play on our guitars and sing. We could not afford a piano, but we had rescued the dear old guitars, and often we had spent the evening singing to them.

I liked him very much, but gradually I began to grow frightened. Something Auntie said made me realize that perhaps I was the reason of his coming. It frightened me because I knew I could never love him, and because I believed, though I did not dare even to hint at it, that Auntie Emma had grown to care for our tall, handsome visitor. It seemed to me that she was fighting with herself, as though she had made up her mind that he cared for me, and because she held my happiness far and away before hers.

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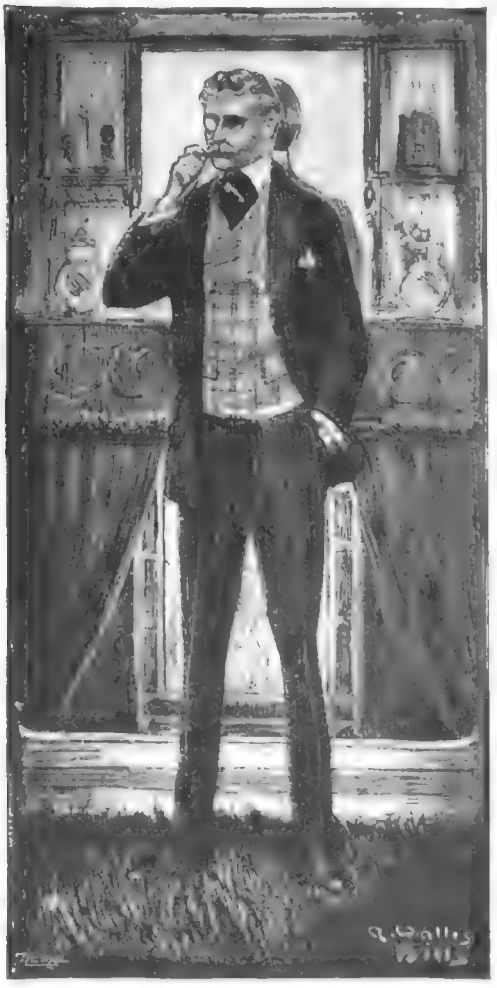
It made me hate myself, and it almost made me hate him. Why should he care for me when Auntie Emma loved him? She was a million times sweeter and better than I, and she would make him much, much more happy than ever I would.

Yet what could I do? He kept coming, and was so kind and nice to us both, and the thought of my good fortune made Auntie so happy. Yet all the time it was not my good fortune, for it made me miserable; and deep in her heart, though she was too good and unselfish to show it, it made her miserable.

Then late one afternoon the whole truth was revealed to me. It was like a great cloud passing away from the sun. Everything became clear and bright and beautiful to behold.



LORD SELWERN TUGGED AT HIS MUSTACHE.

We were having some tea, and suddenly a silence had come upon us. I was feeling dreadfully miserable, for the Earl had been hinting that he was perhaps going away, but that his departure depended on some one else. I dreaded what that meant. It was a fear of his telling it to me that had kept me, when he visited us, close at Auntie's side.

Suddenly I looked up. Auntie was staring down into the empty fire-place dreaming. He was gazing at her. I understood the truth then. I saw it in his look. There was such a gentleness in it, such a yearning. He loved her! Oh, it was plain to me, quite plain.

Something must have startled him. Perhaps it was the joyous thump, thump, of my heart. He suddenly glanced at me, and met my look; and he saw that I had seen his, and that I knew. Our eyes met, and he flushed such a dark-tanned flush, and I sort of blurted out in a whisper:

"I understand. Oh, I'm so glad."

He gave a smile—I almost loved him for that smile—just as Auntie looked up. She had caught my whisper, though it was only a breath.

"Glad, Katie! Why, darling, what—" She stopped. I think there must have been a sudden guilty look on our two faces, for she came to a silence, and jumped to a wrong conclusion.

I could not help it. I slipped from my chair and knelt by her and pulled down her face and kissed her; and Lord Selwern stood upon the hearthrug and tugged at his mustache. You see, I knew all the happiness that was coming to her, and she did not.

Then I looked at him.

"I think I'll go and—and see how the milking is going on," I said.

"No, no, no—ah—er—" he said rapidly, and his "ers" and "ahs" came quickly. "I—er—ah—it's—it's another tire wants mending. 'Pon my word."

"What does he mean?" asked Auntie softly. "Oh, I think I can guess," she

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went on. "But I'm in the way," she added, kissing me.

"No, no, you are not; and—you don't understand, Auntie. I—oh, I must go." I was just trying to rise, when he laid his hand on my shoulder.

"Ah—er—tell her. I—er—I—ah, it's a bad break."

"He means, Auntie," I said gently, "that he hasn't come here just to drink milk and eat strawberries and cream because he likes them, but because he—he likes some one."

"Yes, yes, my darling," whispered Auntie Emma, and I could see she still was making the big mistake she had been making all the time.

"He thinks her the nicest—" I glanced up at him, and he nodded (very violently for him) and said, "Yes, yes," quickly. "And the best—" He said, "Yes, yes," and nodded after each word—"and the sweetest, and the dearest person in the world."

"My pet! I'm so glad, Katie," whispered Auntie, though I saw tears in her eyes.

"And," I went on, looking up at him at almost each word, while he went nod, nod, nod, like the old cracked mandarin on the mantelpiece when we tapped it, "and he wants her to—to— What does he want?" I asked suddenly.

The nodding stopped and he grew dreadfully red, and tugged and tugged at his mustache. It was cruel of me, but—well, I thought he might tell Auntie the rest himself.

"What does he want?" I repeated.

"Ah—er—he wants—ah—her—to—to do him the honor to—er—marry him."

"Katie, Katie!" whispered Auntie, and she kissed me before I could stop her.

"She hasn't answered him yet," I said slowly.

Auntie looked at me.

"Not answered him! But you——"

"It's—it's you, Auntie Emma. It's what I think; and—and it's what he thinks."

"Katie—" whispered Auntie. There was a strange hush in her voice.

"It's what he thinks and it's what he wanted to tell you all along" (more and most emphatic nodding), "and—and what," I said, scrambling to my feet, "he ought to tell you himself. Tell her yourself," I said to him. I was getting angry then at his doing nothing.

HE HAD HIS ARMS ROUND HER.

Auntie had risen. She had made a movement. I think—I know now as a matter of fact—she wanted to escape because it was all so sudden and unexpected. But she hadn't a chance. He stepped forward and I ran to the door. There was a mirror on the wall, and in it I just caught a glimpse of them both. He had his arms round her and was kissing her.

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STAGE I. A HOLE IN THE GROUND. JUNE 9TH.

## MUSHROOMS IN STEEL.

By Rupert Hughes.

The "high" building had its rise in the desire to squeeze the greatest possible profits out of a given area of ground, as well as in the desire to increase the compactness and accessibility of busy metropolitan centres. The quick building of the high building had its rise in the desire to avoid the long payment of heavy taxes on an idle plot of land in the core of a city, and to bring in as speedily as possible the increased rental which these Titanic beehives represent. To erect in one year a building usually requiring two, often means the addition of tens or even hundreds of thousands of dollars to the income derived from the rent of offices; the saving of otherwise wasted taxes is also a very handsome amount.

To erect buildings almost indefinitely high became theoretically possible only when a daring soul conceived the idea of turning topsy-turvy the fundamental mode of large construction, and decided that instead of supporting the frame of the building upon the stone walls, he would support the stone walls upon the frame of the building.

The division by two of the time required to raise one of these huge structures became practically possible by another revolution in the venerable practice of builders. A system of coöperation, or rather of concurrence, was devised, so that the allied trades engaged in the work of construction labored harmoniously together.

A new practice of the quick builders, and a most picturesque one, is the taking of photographs showing the condition of

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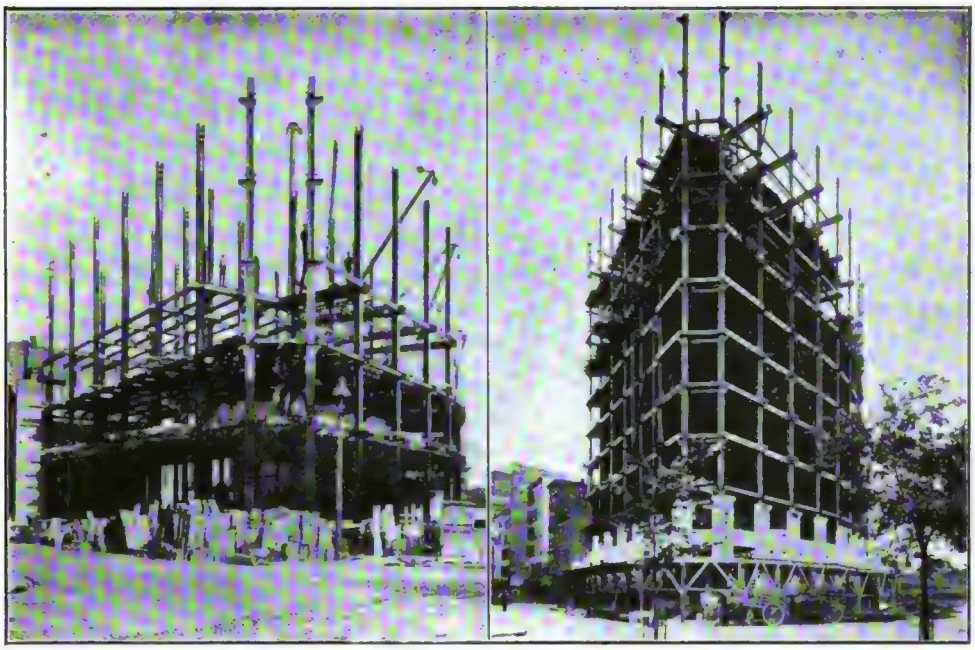
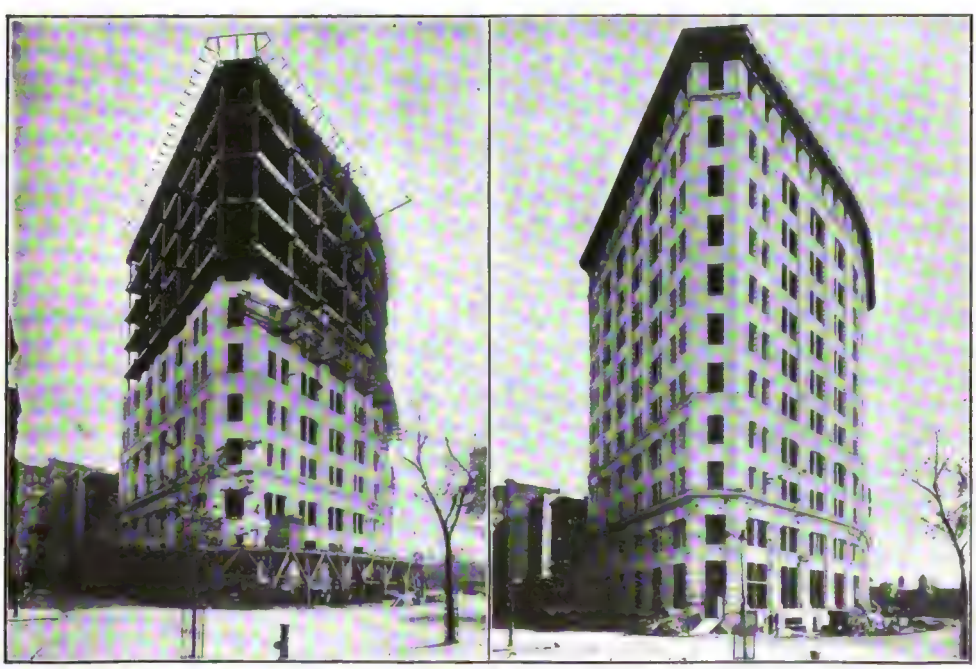


STAGE 2. JULY 9TH. STAGE 3. AUGUST 9TH.

the work at regular intervals of a week or a month.

What was probably the record-making performance in point of speed was the Fisher Building of Chicago, a structure of nineteen storeys, counting the basement, and 250 feet high. On the 12th of October, 1895, the photographer found hardly



STAGE 4. SEPTEMBER 9TH. STAGE 5. OCTOBER 9TH.

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anything but a hole in the ground, with the foundation walls just at the surface and a few uprights of steel thrusting up like saplings.

Two weeks later the steel frame was seven storeys high. On the 12th of November the frame was sixteen storeys high, the terra cotta had begun, not on the ground, but at the third storey, and now reached to the sixth. A month later the roof was on, thirteen storeys were covered with terra cotta, and six were closed up for plastering and had even their window-cases in.

On the 29th of April this nineteen-storey leviathan was ready for the tenants.

A more recent piece of work was the Cheeseborough Building in New York, photographs of which accompany this account, though they do not show the full extent of what is really a very massive structure, as they represent only one corner of the building. They are, however, very eloquent upon the subject of speed. On the 9th of June there is a pit in the earth. On the 9th of July there are three storeys of steel. On the 9th of August there are nine storeys of steel and two of stone. On the 9th of September the roof has been put upon the eleven storeys of steel, and six storeys are covered with stone. Twenty-nine days later, or five months and nineteen days after the excavation, the building is ready for the finishers!

Both the high building and the quick building were the outcome of Chicago enterprise. But the rest of the country has been quick to see the advantages of both of these arts and to adopt them.

One of the earliest and most prominent movers in this line is Mr. Theodore Starrett. The secret of rapidity, as Mr. Starrett explains, is in having everything minutely scheduled and keeping to the schedule. Night work is indulged in only on the rarest occasions; sometimes there will be two shifts, one working from the gray dawn until noon, a second from noon to eight, double rates for night work being avoided.

The value of the schedule is seen in the concurrence of the work. Instead of following the usual custom of bringing in one trade only as another one leaves, the trades necessary to a large building work simultaneously. The steel skeleton of the building is started first. When three storeys of framework are in position, the plumbers enter the basement and begin the installment of the network of steam and hot-water pipes, and they follow the builders up, keeping about the same distance behind them. The electric wires are put in simultaneously. Long before the uprights and girders of the top storey are bolted together, the fireproof arching of the lower floors are put in place. When these have reached about the sixth storey, and things are snug and tight, the plastering starts and treads on the heels of the carpentry. The plasterers find themselves generally in the top loft ten days or two weeks after the roof has been put on.

The value of this elaborate system can be seen when one is reminded that in the old practice of beginning the plastering at the lowest floor only after the roof was on, the plasterers could not finish the building until two months later.

The trimmers are now brought into the building, and the "handles of the big front doors" are soon being polished. And the furniture vans are unloading their freight long before the stone masons would have completed their work on far smaller buildings constructed on the old schedules.

The ability to work quickly is enhanced by the magnitude of the surface. Four hundred men are easily set at work directly upon one of these structures, while the total force engaged in contributing to it may total four thousand. In the erection of the railway station at Columbus, Ohio, six hundred and fifty men worked at once. In this case three million bricks were laid in thirty days, two trainloads a day being required.

The science or art, then, of the quick building of the high building is a sort of warfare. Like other warfare, it has its humdrum routine and its unpoetic features; but it has also its romance, its thrills, and its splendid rewards for him who can manipulate as a unit a host of varied forces, and snatch victory from impending defeat.

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By

Ulyss Rogers

## I.

"Th' 'ead desires the pleasure of your company," said Biffins, the house-porter, with a leer. "At once, young gentlemen, if you please."

Biffins dexterously dodged the "Livy" Hawkins Major hurled at his pleased countenance, and left the pair of culprits to the contemplation of their misdeeds and the imminent reckoning.

"Which of our sins has hit back at us now?" inquired Lippincote of his friend. "That buzzard stalking adventure we had with old Gaybone's turkeys takes my vote."

"But not mine," returned Hawkins Major. "Gaybone hasn't missed the two we catapulted yet. No, it's the "whited sepulchre" affair. We've been spotted for it at last. It's that beastly Timmins, Dobson's fag, who's split. I could swear I saw him lurking in the quad as we were giving the finishing touches to the old Don's effigy."

"Then, if that's it," said Lippincote, stuffing an exercise book down the back of his neck, between his shirt and waistcoat, "it's as well to be prepared for the worst. The Head worships that dirty old copper effigy of his predecessor, and the look he put on when he cast eyes upon our desecration of it, I, for one, estimate at a dozen cuts and four hundred lines, to put it at its mildest."

Experience, combined with instinct, urged them to a momentary delay before interviewing the head master. And the short interval was occupied in bodily fortifications of a character likely to minimize the anticipated onslaught.

The tone of the Head's voice as, in response to their timid knock at his study door, he growled, "Come in," was not reassuring.

"It's five hundred lines," whispered Lippincote. "I know the signs of that voice."

"All right," said Hawkins Major. "Don't funk."

"Who is?" asked Lippincote in a whisper, a question which was not answered, for they were now inside, and the hawk eye of the Rev. Peter Dadds was endeavoring to hypnotize them into a condition of quiescent dejection.

The Head was not alone. Behind him, shrinking into the shade of a towering

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bookcase, was a fat, stubby young man, with black hair, peering at the boys through a pair of goggles which seemed to focus not only his half-closed eyes, but the greater part of his face into the bargain.

He was the French master, M. de Zachari, new this term, and he was a recluse and a scientist, and in his heart disliked boys, a compliment as genially returned. When he declined to handle a bat, and moped up in a corner of the field instead, lost in contemplation of a mole hill, a grave doubt as to the length of his stay at Hillhurst was shared by masters and pupils alike. Two days later, when one of his ant colonies (he kept two nests in cases in his private den) broke loose, and swarmed all over the house, he was voted a thorough-paced nuisance.

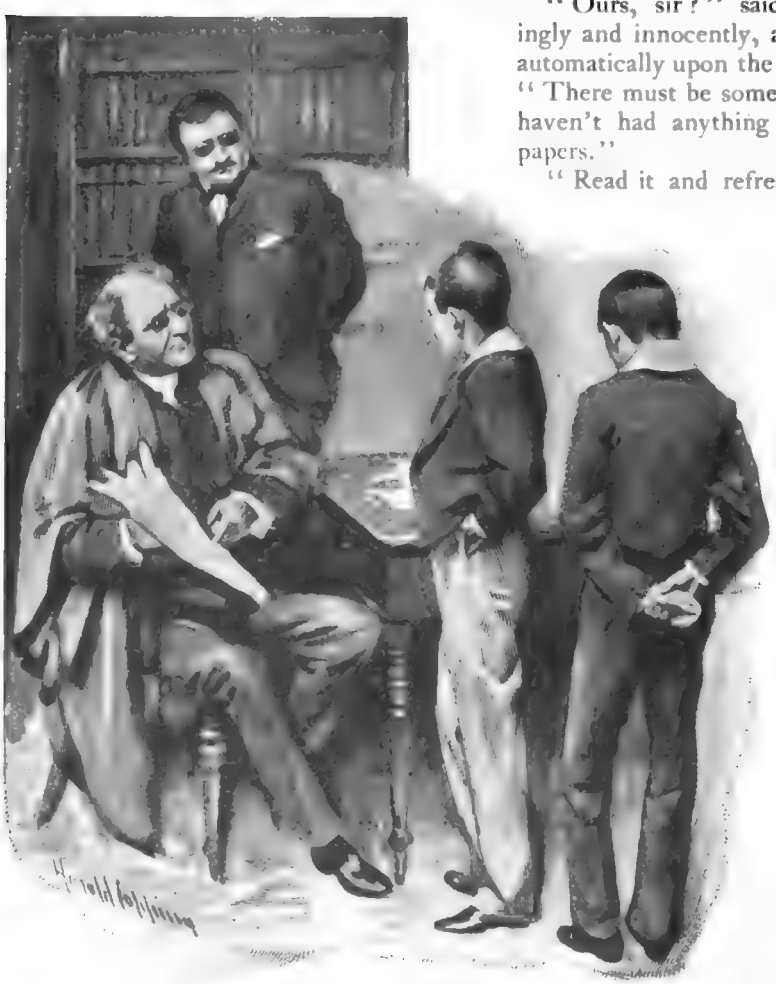
Hawkins Major and Lippincote, perhaps, could have shed some light upon that matter had they liked. But they didn't; and "Zacchy," as the new master was nicknamed, received an intimation from the Head that in future all plagues of that sort were to be studied out of doors.

But, worst of all, Zacchy was sentimental and a poet. It was to be demonstrated also that he was in love.

The Head broke the ominous silence. He picked up from the table a current copy of "The Hillhurst Chronicle," and, pointing with his finger, "Read that," he said. "Your handiwork, I presume?"

"Ours, sir?" said Hawkins, inquiringly and innocently, as his fingers closed automatically upon the badly printed sheet. "There must be some mistake, sir. We haven't had anything to do with newspapers."

"Read it and refresh your memory," said the Head portentously.



"READ THAT," HE SAID. "YOUR HANDIWORK, I PRESUME?"

There was a section casually marked in blue lead-pencil. The boys doubted not it was to this their attention was directed, and they bent to the consideration of it. Above, in ornamental text, was the heading "Poet's Corner." Encircled by the blue were three verses of arrant twaddle, and at their foot, in brevier capitals, the hopelessly inculpating initials, A. H. de Z.

As they read, the gravity of the situation van-

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ished from the boys' minds, and a flickering smile broke out upon their faces, which, as they concluded the lines, gave place to a broad, well-defined, and exuberant grin.

"I thought so," said the Head. "The matter pleases you, gentlemen, even despite your second acquaintance with it. Perhaps, when your amusement is at an end, you will explain why you stole that poem from M. de Zachari's room, and have held the school and its masters up to the ridicule of the county."

The laugh died from the boys' faces.

"We never stole it," said Hawkins Major, "and for my part I've never set eyes on it before."

"Nor I," said Lippincote.

The Head's glance penetrated them. He was more than half inclined to believe in their innocence, when Lippincote's lips began to curl into a smile again. The remembrance of the verses was too much for him, and he could not restrain the laugh that would force itself into outward manifestation.

"Lippincote," roared the Head; "Remember yourself, sir," and Lippincote remembered. "Monsieur de Zachari informs me," the Rev. Peter went on, "that he scribbled those lines just for mere amusement; that he left them upon his table, or possibly dropped them in the corridor, and that some one has had so little respect for the school or for him as to hand them to the editor of this journal for publication. Inquiries at the newspaper office point to you as the offenders. The description of the clerk leaves little doubt of your identity, I fear. Were you or were you not at the office of that paper on Wednesday afternoon?"

There was a strange and sudden light of recollection stealing across the boys' faces, but they said nothing.

"Speak, sir!" cried the Head, singling out Hawkins. "Have you been near the 'Chronicle' office this week?"

Hawkins looked up. "I will not deny it, sir," he said.

"And you?"

"I was with Hawkins, sir," said Lippincote.

"Monsieur de Zachari, you may leave me if you will;" and the Frenchman, more horrified than the boys, was glad to make his exit.

Thence emerged also, ten minutes later, two boys with troubled faces and a pained recollection of the pattern of the study carpet, as contemplated from an ungainly attitude at the height of the Head's desk.

"Confound Zachari," muttered Hawkins Major, throwing his chest forward in the obvious effort to bring relief to the small of his back. "Strange the Head didn't rise to his daughter's description—'the golden hair,' 'the ruby lips,' 'the cerulean eyes.'"

"Zacchy's a fool," said Lippincote. "I wonder how Miss Dadds got hold of the rot. Say, Hawky, we were sold when we took that note to the 'Chronicle' office for her."

"I'd do it again," said Hawkins Major defiantly, "even if I knew what was in it. How dare a frog-eating Frenchman write such stuff to her. He'd done it before, I know. She told me. Lippy, you won't split?"

"Not I," replied Lippincote, pledging himself.

"I'm in love with her myself."

"So am I," said Lippincote, not to be outdone in gallantry.

"No, but I mean really," said Hawkins Major. "It's the first time I ever properly cared for anybody, you know, and I'm not going to be outdone by this French fellow."

"But he's got the pull of you. You can't speak French and give her private French lessons."

"Yah! Girls aren't won by parley-vooing. Lippy, between me and you, she told me she was awfully glad I got the average bat last year. We shall be engaged before I leave here, and then let Henri de Zachari beware. Pooh! He's old enough to be her father."

"Well, she's ever so much older than you."

"Who says so? Only four or five years, anyhow, and that doesn't count much when a fellow's got up to my age."

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"No—" admitted Lippincote a little doubtfully, "I don't suppose it does. But, I say, Hawky, the Head——"

"Oh, if it comes to a choice between Zacchy and me, I've no fear as to the result. The Head's no fool," continued Hawkins Major with beautiful modesty, "however much he may look it. He knows the difference between an Englishman and a Frenchy, let alone Zacchy and me."

"Yes, he ought to—I suppose he does. I say, Hawky"—with sudden viciousness, a quick movement of his shoulders bringing about unpleasing reminiscences—"cut him out, the presumptuous cad! Look here, I don't mind giving the girl up altogether, and doing my best to help you—What are you grinning at, you silly fool?"

"Oh, nothing! It's awfully kind of you, that's all," said Hawkins Major sarcastically.

"I suppose you think I haven't a chance against you," retorted Lippincote, much ruffled and very red in the face. "Then let me tell you that you were never more mistaken in your life, my fine fellow. Why, come to that," he went on spitefully, "I'd sooner lay on Zacchy than you, if I didn't want to lose the tin. The Head may back you up—though I doubt it—but a girl knows a good man when she sees one; and Zacchy, when all's said, is a jolly clever chap."

All of which was very bitter and nasty, but Hawkins Major smiled with imperturbable serenity.

"Poor Lippy's jealous," he thought, "and no wonder. If I were in his shoes I'd be jealous myself."

Hawkins Major slept the sleep of the rejoicing martyr that night; for though the density of a hard mattress did not minister to the comfort of a cane-marked back, yet was there a strange gladness in his thirteen-year-old heart. He dreamed pleasant dreams of a blue-eyed girl with a mass of wavy hair, and woke early to pull from beneath his pillow a little folded note, and read for the fiftieth time:

*My Dear Hawkins:* You were a brick this afternoon, I hardly know how to thank you enough. Some day, perhaps, I shall have a chance of showing how much I appreciate what you suffered on my account. Please also thank your friend, Lippincote. You are a pair of regular Britons. Kindest regards. Yours very sincerely—KITTY DADDS.

The next day there was evidence of unusual interest among the masters, and by prep. time a rumor had gained currency among the upper forms. Hawkins Major had fathomed it by the time he wedged himself in by the side of his sworn chum.

"Have you heard, Lippy? Zacchy's going."

"Going? Where?"

"Got the—" Hawkins Major expressed the rest in a low whistle and a fly-away motion of the hands. "In other words, resigned. We know why, eh, Lippy?"

"It seems rough," said Lippincote, "and our fault, too, or rather——"

"Hush," said Hawkins Major, "not a word against her. It serves him right. How dare he scribble such rot to her!"

"You would have done the same if you could, Hawky," said Lippincote.

Hawkins retaliated by screwing his knuckles into his friend's spine, and they settled down to work.

The term and M. de Zachari's stay at Highcliffe hurried away. Hawkins never had a chance of conversing with Miss Dadds, though he longed to know if further developments of the poetry affair had in any way inculpated her. A thoughtful, almost sad, expression was growing upon her face, he imagined, and it distressed him; though when her eyes lighted upon his she beamed one of her most radiant smiles upon him, whereat Hawkins blushed furiously, and was in the seventh heaven for the rest of the day.

## II.

Hawkins and Lippincote had broken bounds. The school term ended on the morrow and cavies were lax.

"Besides, what's the odds?" asked Hawkins, discussing the probabilities of detection and capture. "It's now or

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never for those kestrel's eggs at Highcliffe Point. If we leave them, Groggs, the butcher's boy, won't."

"And I'd rather get licked ten times over," said Lippy, "especially after the way Groggs scooped us over that daw's nest."

"I met the cad near Hughes's farm a day or two ago, and he yelled out something or other—I didn't hear what. Beastly cheek."

"That sort of person," said Hawkins Major sententiously, "is born impertinent, and if you want to put him into his proper place and shut him up, you must prove to him your superiority. It doesn't do to let him scoop you."

Lippincote nodded approval. If there was one thing he admired in his friend, it was that young man's sound opinions and forcible language when expressing them.

It was a walk of a couple of miles to Highcliffe Point. They had left the main road, and were gayly trotting down a rough cart-track which led to the edge of the cliff, when Hawkins suddenly pulled up.

"Hullo, what's that?" he cried.

"GREAT SCOTT!" SAID LIPPINCOTE, AS THE RUNAWAY DASHED NEARER, "WHY, IT'S ZACHARI."

The rapid pounding of horse's hoofs and the whirl of wheels smote their ears.

"By Jove, something's bolted," said Lippincote.

This speculation was right. In another instant round a bend in the descent toward Highcliffe appeared a madly galloping horse, the bit between his teeth, and nostrils widened with wild fear. The animal was harnessed to a dogcart, which swayed from side to side of the road, threatening to overturn with each twist and jolt. A man, hatless, wide-eyed, with hair on end, was vainly tugging at the reins, and, at his side, clutching him in wild anxiety, sat a girl, pale, with fear-stamped face.

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"Great Scott!" said Lippincote, as the runaway dashed nearer and nearer, "why, it's Zachari."

"And Kitty," gasped Hawkins Major, horror-stricken. "They'll be killed."

It seemed as if Hawkins's dire speculation would be fulfilled, for the frantic Frenchman, spying the slightly rising cart-track, and knowing nothing of the precipice beyond, thought that if he could get the mad steed on this incline he could check its career. He gave a wild lunge at the near rein to effect this design.

SHE CAME TO THE BED AND, STOOPING DOWN, KISSED THE BOY.

The horse responded, and swung round into the rutted track. A providential banking of the hedge prevented a complete capsize, but at the moment of rounding the dogcart bumped over a huge stone, the Frenchman was catapulted from his seat at a tangent, and, describing a parabola in the air, landed on his back in a furrow of the adjacent field.

But Kitty still sat tremblingly in the cart, and the horse dashed onward more madly than ever. It was but two hundred yards to the edge of the cliff.

The boys stood in front of the affrighted animal and waved their arms, but the horse, swerving a yard, dashed by like lightning, and the axle of one of the wheels caught Lippincote in the side and bowled him over like a ninepin.

The tail-board had fallen down during the mad career, and Hawkins grabbed desperately at the chain as the cart swept past him. The next instant he had clambered in. Miss Dadds had either fainted or was utterly paralyzed by fear, and the reins which had fallen at her side when Zachari was shot out, hung limp in her nerveless hands. Hawkins seized them and threw all his weight into the effort to stop the horse.

But the suddenness of this fresh curb only made the beast more desperately affrighted. On and on it dashed. It was but eighty yards to the precipice; Hawkins caught the glint of the white railings which guarded the edge, a trifling barrier to such a charge as was approaching. Eighty yards, fifty, thirty, and still the animal was unchecked. Ten seconds more meant certain death.

It was useless to attempt further resistance. Hawkins realized this, and at the same moment conceived another plan for saving Miss Dadds.

Dropping the reins, he seized her in his arms and half sprang, half fell, with her out of the trap, sprawling in the track not five yards from the edge of the cliff. A sharp cry of pain escaped from Hawkins's lips as the wheel jolted over his leg. The next instant, the beast, splintering the light railing to matchwood, fell headlong into the abyss with the trap on top.

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## III.

It was the eve of the breaking-up day, and Hawkins Major, tucked up in bed with his leg in splints, had said "Good-by" to one after another of his chums.

Presently there came a light tap at the door.

"May I come in?" asked a sweet voice, and the next instant Miss Dadds had entered. She came direct to the bedside and, stooping down, kissed the boy.

The color suffused Hawkins's face even to the temples.

"You're a brave boy," she said. "I wanted to come before to thank you for saving my life, but the doctors wouldn't let me. And you have suffered so much on my account."

Hawkins Major was at a loss for words. "Not at all, not at all," he stammered out.

She was commencing to say something else when the door opened and the portly, if bruised figure of M. Zachari appeared in the doorway.

"Ah, *le brav garçon.* I, too, must thank. *Merci! Merci!* One tousand times *merci!*"

"All right," said Hawkins Major. "Only I think Miss Dadds——"

He was interrupted by a hearty laugh from the Frenchman.

"Ha! ha! Then you have not told yet, Keety? Ah, it is a fery good—what you call it?—joke."

"Kitty!" The Frenchman had dared to call her Kitty! Hawkins Major clenched his fists beneath the bedclothes, and looked his fiercest at the intruder. But Miss Dadds didn't mind.

"No, Henri," she replied. "I was going to tell Hawkins Major all about it. You see, we're married now, M'sieu de Zachari and I."

"Married!" gasped Hawkins Major.

"Yes, and we have to thank you, partly. You remember when I sent you to the 'Chronicle' office with that letter?"

"Yes," gasped Hawkins Major.

"Well, I only did it for fun. Henri—M'sieu de Zachari—had written me poetry before, and I found this in the west wing corridor, and thought it would be sport to surprise him by getting it into the papers."

"Yes."

"I didn't think of father, and the school, and all that. You were such bricks not to split on me. But the Head discharged M. de Zachari, and I was so sorry for him, because it was a shame, and all my fault, for they weren't such bad verses either—and, well, when he asked me to marry him the day before yesterday, I thought I really ought to, after what had happened, so we ran away to Barnham, and the registrar did it. Then we thought we'd better come back and—and, you know what happened. It has all turned out so well, except for you, for the Head has given in, and M. de Zachari is staying on. If only you hadn't been hurt."

There was a great gulp rising in Hawkins Major's throat.

"Oh, never mind me," he said, "I'll soon be all right again."

But when Lippincote came in to say "Good-by," five minutes after M. and Mme. de Zachari had left, Hawkins hastily smudged a sleeve across his eyes. The action did not escape Lippincote, who said:

"You're snivelling, Hawky."

"I'm not," said Hawkins, indignantly.

"You are," retorted Lippincote, "and I don't wonder. It's beastly luck to be cooped up here with a broken prop half the holiday."

"Beastly," said Hawkins Major, "but it can't be helped."

"I'm stopping on, too."

"Whatever for?"

"To see you through. Now, you just lie quiet. Heard the news?"

"What, about Zachari? Yes."

"And you don't—you aren't—I mean——"

"Stow it, Lippy," said Hawkins Major, gulping down the last lump. "Just get out what's left of that bottle of ginger wine we smuggled in the day before yesterday. You'll find the change out of my last bob in those trousers over there. This wedding's got to be celebrated if it breaks the bank."

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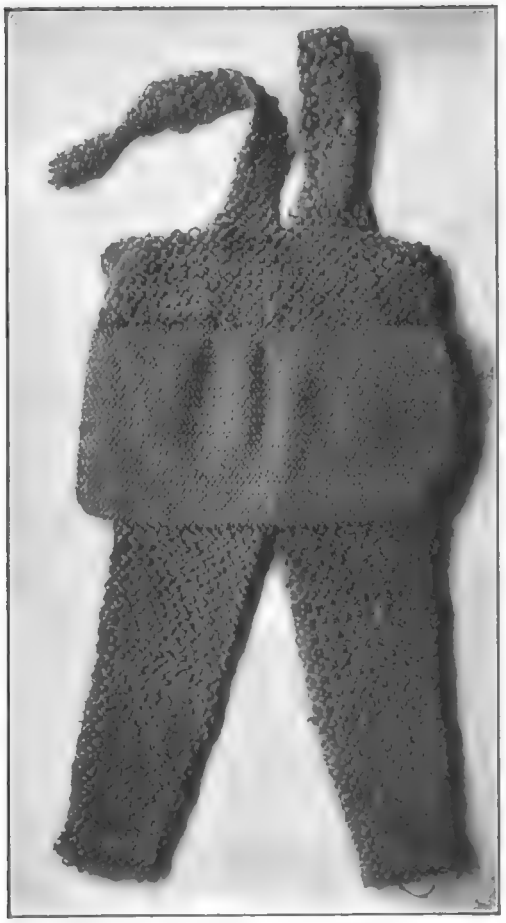
# ARMOR-CLAD SAVAGES.

By René Bache.



COCOANUT-FIBRE ARMOR FROM THE KINGSVILLE ISLANDS, SOUTHERN PACIFIC.

One is hardly accustomed to think of the American Indians as a people clad in armor for war purposes, and yet it is true that until within comparatively recent years the savages of this continent were quite generally accustomed to wear what were in effect coats of mail, made in a number of different styles, and in some cases so constructed as to cover the entire body with an efficient protection against primitive weapons and missiles. With the advent of fire-arms, against which such defensive contrivances were useless, came about a disuse of the latter.

The interest attaching to the subject of savage arms is derived largely from the circumstance that almost nothing has been known about it until recently, when Dr. Walter Hough, of the National Museum, published an essay on the theme. In that scientific institution are deposited a large number of pieces of aboriginal armor, and they serve most admirably to illustrate the various kinds of devices for body protection adopted by savage or semi-savage people both now and formerly, not only in the Americas, but also in other parts of the world. Some of these armors are made of slats of wood, while others are of whale-bone. There are mail-coats of fossil ivory, of iron plates, of hide, and of other materials. The selection of defensive articles and their adaptation to the purpose mentioned afford an interesting study in native invention.

Perhaps the most interesting of these armors have been obtained from Alaska and from the Northwest Coast. Owing to the nearness of Asia, there has been a close relation between protective devices of the sort used by the Alaskan Eskimo and by the Siberian natives. Thus, for example, a curious kind of armor common to both sides of Bering Sea was composed of small, flat, oblong plates of ivory, pierced near the edges with holes and lashed together with rawhide thongs. The edges of the plates are so formed as to admit of overlapping and curving the armor around the body, and, owing to this mode of construction, the coat of mail could be rolled up in small compass when not in actual employment. The coat was fastened at the back, and sometimes a yoke of skin fitting the neck and shoulders formed a support for the rows of plates.

On the Asiatic side, the Chukchis of Plover Bay wore a style of cuirass made of long strips of whalebone and extending from neck to mid-thigh, the strips being arranged vertically and tied together through perforations on their edges. This garment was elastic, had straps to go over the shoulders of the wearer, and was tied at the back with cords. It was the kind of armor used by the Chukchis when they

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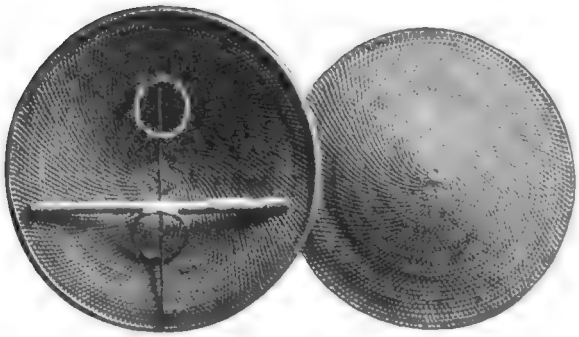

RATTAN SHIELDS, MALAY PENINSULA.

went over to trade with the hostile Eskimo of St. Lawrence Island, such expeditions being always attended with a great deal of danger. In the same region was employed a species of "hoop armor," as it has been called, composed of horizontal bands of sealskin instead of rows of ivory plates. Dr. Hough says that this sort of coat might be likened to the "banded mail" of the Middle Ages, respecting which there has been so much discussion. Iron armor plates were dug up in a marsh at Cape Prince of Wales, Alaska, and similar plates of copper have been found on St. Lawrence Island.

Captain Cook, in his report on the Indians of the Northwest Coast, said: "They incase almost the entire body in a wooden or leathern armor, making a breast-plate of wood and an arrow-proof coat of thin flexible strips bound with strings like a woman's stays. They wear helmets with curiously carved visors." Such was the nature of the defensive garments worn by the Tlingits and Haidas, which come under the head of what Dr. Hough calls "slat armor," this kind of mail-coat being always made in two sections, one for the front and another for the back. The hardest wood procurable is selected for the purpose, and the slats are sewn together with sinew cord. It appears that the warriors of the Northwest Coast had a similar protection for their legs and arms, and, with heavy wooden helmets and slats to cover body and limbs, the fighting man of that region was very adequately provided. In no way was this armor inferior to that employed in ancient or comparatively recent times among the Japanese.

The aboriginal armor of North America was designed to protect the vital organs and to allow free movement of the limbs. In most cases the form assumed by it was of a sleeveless jacket surrounding the trunk and suspended from the shoulders. Lisiansky, who wrote his voyages in 1805, makes the interesting statement that the Tlingits of the Northwest Coast, on the introduction of iron and firearms, adopted a new form of bullet-proof protection, consisting of a buckskin strip around the neck with iron plates attached pendent down the breast. Among the Hupa Indians of California there was in use a kind of armor made of "wattles and twine, woven and bound with buckskin." Red lines marked upon it denoted the number of enemies slain or captives taken; there were also signs to indicate the rank of the wearer. Coats of this description were put on like a waistcoat and tied in front. They are distinguished by Dr. Hough as "rod armor."

It was natural that on the western slopes of the Rocky Mountains and on the Great Plains savage man should have applied for the defence of his own body the skins

TURTLE-SHELL SHIELD—PREHISTORIC, FLORIDA.

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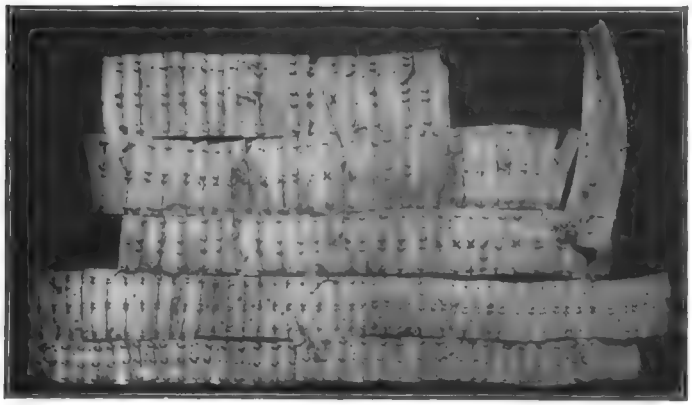

WALRUS IVORY ARMOR, ESKIMO.

which he obtained from the great mammals of sea and land, which up to the time of the introduction of firearms furnished an adequate protection against the weapons of enemies. For this purpose the hides of the elk and moose served admirably, being tanned to render them flexible, and often coated with glue and sand. An interesting description of this process is given by Father Morice, who says: "This had the form of a sleeveless tunic falling to the knees, so that it afforded protection to the whole body save the head. In hard fights the savages shot kneeling. The armor or cuirass was of moose-skin, which when sewed according to the proper pattern, was soaked in water, then repeatedly rubbed on the sandy shores of a stream or lake, and dried with the sand and small pebbles adhering thereto, after which it was thoroughly coated with a species of very tenacious glue obtained from the swimming-bladder of the sturgeon. When this process had been repeated three or four times, it formed an armor invulnerable to arrows."

Two modern coats of mail preserved in the National Museum are from Alaska. They have the form of a waistcoat, and both are fastened with brass buttons of English manufacture. One is plated over the entire front and a portion of the back with Chinese coins, like the "penny armor" of Europe; the other is plain. It is not known whence these coins were derived, but the probability seems to be that they were collected and embroidered upon the garment by the Chukchis of eastern Siberia. Most of the money-pieces are current Chinese coins, but a few are Japanese.

Over all of the American continent the fashion of wearing armor in battle seems to have been almost universal in earlier times. The Pawnees employed a kind of hide cuirass and a helmet, and the Comanches are said to have covered their horses with buffalo-hide for the purpose of defence. Charlevoix says that the Iroquois, when they attacked an intrenchment, covered the whole body with small, light boards. Some had a sort of cuirass or breastplate of pliable rings, very neatly worked. They had formerly a kind of mail for the arms and thighs. The Pueblo tribes wore cuirasses of elk-skin or buffalo-hide, or of padded cotton and yucca, and carried round shields of basketry, of thick rawhide, or of closely netted cotton, symbolically painted.

In ancient Mexico armor obtained a high development. Reeds or hides served to protect the common soldier, while the

SHASTA ROD-ARMOR COAT, CALIFORNIA INDIANS.

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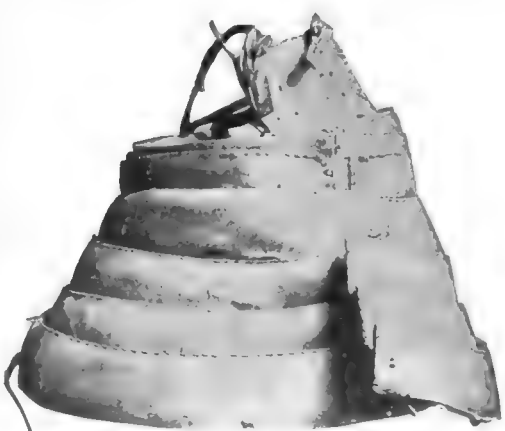
MONEY ARMOR—SKIN COVERED WITH CHINESE AND JAPANESE COINS, ESKIMO, ALASKA.

body defence of the nobles and higher grades of warriors consisted of a breastplate made of quilted cotton, over which was worn a thick cotton coat, fastened behind and decorated with feathers of the color of the company's uniform. This cotton armor was completely arrow-proof. Arm-guards and leg-guards of wood, covered with leather or gold plate and trimmed with feathers, completed the protective apparatus. Among the Toltecs the body armor worn by officers was of double cloth padded with cotton and reaching down to the ankles. The private soldier painted the upper part of his body to represent armor, but from waist to knee he was defended by a kind of kilt. It may be mentioned parenthetically that the ancient Peruvians wore breastplates of gold, while in other American regions copper breastplates were employed. The Tarascos of Michoacan are described as possessing an armor of remarkable completeness, comprising a helmet, a coat, leggings, and protection for the arms—all made of wood, which was covered with gold or copper plate so neatly that the pieces composing the suit had all the appearance of being made of a solid metal.

The war bonnets of the American aborigines are in many cases to be classed with helmets. As Dr. Hough says, the function of the helmet, after protection, is to adorn the head, but usually it has the additional purpose of inspiring fear by grotesque or horrid construction, and thus it is connected in ethnological philosophy with the mask. The tall bearskin hat, adopted originally for the purpose of making ordinary men look like giants and therefore terrible, is but a modification of the old idea of the helmet. Among the Pueblo Indians mask-helmets still appear in religious ceremonials, brought down from ancient times, and in the National Museum is quite a collection of such contrivances, the most interesting among them being from the Northwest Coast. These latter are of wood, and bear on their tops alarming representations of animals and grotesque faces.

Up to the time of the introduction of firearms, shields were in well-nigh universal use by American savages when they went to war. As a rule, they were made of thick rawhide, that of the buffalo and elk being preferred. Sometimes, however, they were of wood, as on the Rio Maranon in Peru. The Virginian Indians used "targets made of barks," as recorded by early travellers, while the Navajos made



CHUKCHI ARMOR SHOULDER-PIECE, MADE OF SEA-LION HIDE, WITH GUARD FOR THE BACK OF THE NECK, EASTERN SIBERIA.

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theirs of cedar rods fastened together with cords. Among the natives of New Mexico another kind of shield was of small laths interwoven with cords in such a manner that it could be shut up like a fan, to be carried under the arm. In Tabasco large turtle shells inlaid with gold were commonly utilized for the same purpose.

The early Sioux shield was made of the skin of the buffalo's neck, hardened with glue extracted from the hoofs of the same animal. Among the American aborigines everywhere this defensive contrivance was always held on the left arm, usually by a simple thong of buckskin, though sometimes the handle was of wood. Most tribes put one or more covers of dressed buckskin over the shield, and these covers were decorated in a fanciful manner. To this day the warrior fraternities of the Moki of Arizona have an elaborate ceremonial of the shield, held at the winter solstice by the societies. On such occasions the sun is represented by a shield, and a carefully acted drama describes an effort by evil demons to prevent the solar deity from advancing northward from the southern clime in which he has taken refuge.

HELMET—THLINGIT INDIANS, ALASKA—MADE OF CARVED WOOD, WITH EYES OF PEARL-SHELL, AND TRIMMED WITH FEATHERS.

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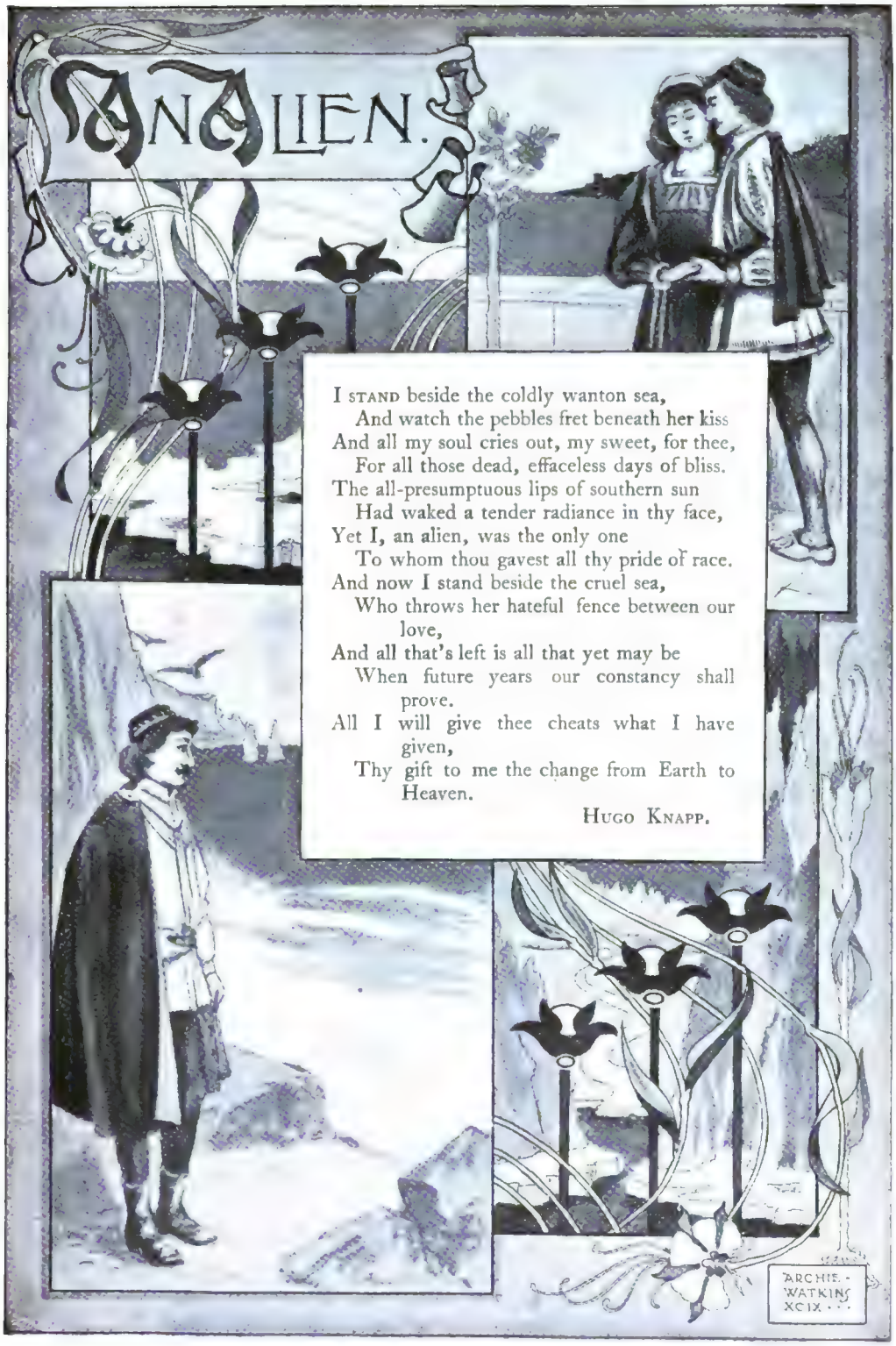
AN ALIEN.
I stand beside the coldly wanton sea,
And watch the pebbles fret beneath her kiss
And all my soul cries out, my sweet, for thee,
For all those dead, effaceless days of bliss.
The all-presumptuous lips of southern sun
Had waked a tender radiance in thy face,
Yet I, an alien, was the only one
To whom thou gavest all thy pride of race.
And now I stand beside the cruel sea,
Who throws her hateful fence between our love,
And all that's left is all that yet may be
When future years our constancy shall prove.
All I will give thee cheats what I have given,
Thy gift to me the change from Earth to Heaven.
Hugo Knapp.
ARCHIE. WATKINS XCIX

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No doubt the good people of Marbletown were justified in their belief that Isaac Feldstein, who lived in the old frame dwelling at the head of Pineapple Court, was a miser. Although he owned the ramshackle house, he expended nothing to keep it in repair. Then he owned other property in Marbletown, in Hardscrabble, in Pilpoodle, and a farm out Squohank way, all of which he rented to good tenants; yet he employed neither cook nor housekeeper, and nobody knew who did his laundry work. Gossips, who attended to the private business affairs of a great many residents of the town, admitted that Feldstein did at one time pay Dr. Bolus for attending Israel Silberstein, and also Upholder, the undertaker, for burying him; "but," said Mrs. Gabble and others of her way of thinking, "that was because Silberstein was a Jew. Isaac Feldstein is a Jew; and Jews always help their brethren in distress, because it's their belief that if they don't, the Lord will not prosper them in their business. Jews don't believe in any other future punishment, as we Christians do, and that's what makes them so mean and miserly."

Mrs. Gabble had never heard of Sir Moses Montefiore, who died a few years ago when within a few months of one hundred. She had never heard of his giving away millions in charity. She had never heard of his travelling in a sleigh through a great part of Siberia with his aged wife, bearing liberal gifts to the toiling poor. She had never heard of his countless acts of kindness to Christians in his own and other countries. In fact, she and her fellow-gossips had never heard of Sir Moses Montefiore, nor of Baron Hirsch, who had given millions to help the poor not only of Europe but of America. Mrs. Gabble had never heard of Judah Touro and his wise charities in New Orleans, Newport, New York, and elsewhere. He was another Jew who never thought of limiting his efforts to aid his fellow-creatures. His good deeds were done for Christians as well as for Jews, for colored people as well as for whites. No; Mrs. Gabble had learned only that Jews were mean, mischievous, and miserly. She had learned to apply the command, *ab uno disce omnes* —by one know all. Because a Jew had cheated her in an egg trade and another had sold her for pure gold a ring made of oroide, and because David Davids, the rag-and-bottle man, was never known to tell the truth, these men must be taken as types of Jews, and all Jews must be catalogued as untruthful, cunning, dishonest, and mean. "All men are liars," wrote the Psalmist; but in the same verse he wrote that he had said this in his haste. Mrs. Gabble and her fellow-gabblers had their say about the Jews, but what they said was not only in haste, but in ignorance.

Well, in the opinion of the community, Isaac Feldstein was a mean man, anyhow. Think of his telling the St. Paul's Church committee, who asked him for a contribution to aid in the purchase of an organ, that they should first pay for their new carpet, and that they ought not to keep

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their pastor waiting any longer for his salary, now six months in arrears. And was it not an evidence of real meanness and a want of good manners, too, to say that the proceeds of the last donation party—a wash-tub, a small ham, a pair of flat-irons, and a dollar's worth of other odds and ends—would not help to clothe his wife and four young children?

Feldstein was not a companionable man. The only person in Marbletown who seemed to know him was Mark Hopper, a poor cripple, who served occasionally as Isaac's messenger, stableman, or what not—a sort of factotum; or, as they say in the cheap restaurants, omnibus, man-of-all-work. Mark was generally as silent as Porphyry's pigeon, but always as lean as Job's turkey is said to have been. He may not have had more flesh on his bones, but that he was more grateful to Isaac than the turkey was to Job was proved more than once. The lean man always averred that although Isaac might be, as Mrs. Gabble thought, a miserly Jew, to the poor cripple he was always kind. "Ef it wasn't for him," said Mark, "I'd be in the poorhouse, where a good many Marbletowners thinks I oughter be. Mr. Feldstein wants me to airn my clothes an' my keep, an' he gives me the chance to do it. He may be a miser, as the good people says he is. Ef so, all I gotter say is, God 'll bless the misers."

One night two shiftless men broke into Feldstein's house, and had reached his sleeping-room before their presence was made known to the solitary occupant. The overturning of the only chair in the room awakened the sleeper.

"Who is there?" said Feldstein, as quietly as though asking the time of day.

"ALL I GOTTER SAY IS, GOD 'LL BLESS THE MISERS."

"Never mind who," was the reply. "Just tell me where your money is, an' keep still. Ef you don't, you'll go dead."

Isaac recognized the voice as that of Michael Holan, an occasional dweller in Marbletown, but well known throughout the surrounding region as Lazy Holan, a good-for-nothing pensioner on his toiling mother, and so utterly worthless that none save two or three of the most graceless hoodlums would have anything to do with him.

"I haf no money for you," said Isaac.

"You lie, you Sheeny hound!" said Lazy Holan. "You've got two hunderd you drawed yisterday, an' a lot more besides. Git up an' open your safe an' hand over the money, or we'll fill you full o' lead." And the show of a big revolver emphasized the order.

"De money I draw yesterday," said Isaac, leisurely rising from his bed, "I paid out before I got home. I haf only a fery little in de safe."

"Open the safe!" Michael commanded roughly, tapping the victim on the head with the butt of his pistol.

The safe was soon opened, and the burglar took from it a two-dollar bill and some silver, and was very indignant.

"Here, you Sheeny," said he, taking the small lamp from the mantelpiece and placing it upon the table, "git your pen an' ink an' write me a check on the Hardscrabble Bank for a tousan' dollars."

"My frent," said Isaac quietly, "my sheck for dat mooch money vould not be good for noting."

"Write the check," said Mike, "an' sign it. Ef it wuz fer five tousan' it would be good, an' you know it."

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Little did the three men in the sleeping-room think that in the shadow of the hall a silent witness crouched. It was Mark Hopper, trembling with fear.

He saw the check written, heard the threats, and saw the pistol. For once Mark's sluggish mind worked briskly.

Acting upon the thought, he made his slow but noiseless way out into the open, where, by the dawn's early light, he turned his steps toward Hardscrabble, seven miles away by the wagon road. Leaving the Marbletown turnpike on his left, and turning into a chestnut grove just across the creek, he threaded his way toward the west. "The longest way round is the shortest way home for some folks," said Mark, "but I know my way to Hardscrabble through the woods, an' this way saves me three mile. Three from seven leaves four, an' ef I can't make four mile by seven o'clock—an' the bank don't open ontell nine—then I'm nothin' better'n a lame oyster with the headache."

As the cripple sat down to rest on the steps of the bank the town clock was striking seven. He needed rest, for he had tramped many miles since his last sleep; yet he wasted no time. Keeping an eye out for the approach of the thieves, he made his way to the little post-office as soon as he saw it opened.

"Why, Mark," said Mr. Butterladle, who was both storekeeper and postmaster, "what brings you over so airly?"

Mark told his story briefly.

"Somethin' must be done," said the postmaster. "You stay here an' tend store for ten minutes, an' I'll hitch up an' we'll ride over to the sheriff's house."

They found the sheriff at breakfast. He brought that meal to a full stop, and in full possession of Mark's story was soon on his way to Hardscrabble.

A little after ten o'clock, Holan and his companion entered the bank and hurriedly marched up to the cashier's window, presented the check, and in a jiffy the sheriff had both in hand-cuffs. Two of the deputies were then sent for Feldstein and presently appeared with him, showing no sign of having suffered at the hands of his midnight visitors.

"You have been the victim of an outrage, Mr. Feldstein," said the sheriff. Then he led the way into the room in which the prisoners were under guard. "Have you seen these men before?" he asked.

"Oh, yes," said Feldstein, "I haf seen them."

"Now," said the sheriff, "are these the men who entered your house and robbed you a few hours ago?"

"Mr. Sheriff," said Feldstein, with a quiet smile, "I haf loosit noting, except a liddle shleep and two, tree dollar."

"But they forced you to give them a check for $1,000."

"Yes; but de sheck vas not goot for noting, bycause my brivate mark vas not on it for de gashier. He vill tell you dat. So you see dey haf nod do me mooch harm, and I hope you vill led dem go. De Holan man vill, I tink, pay me de tree dollar some time, and de odder man he doan owe me not a cent."

"But," said the officer of the law, surprised at the victim's magnanimity, "the Holan man threatened you with a pistol, and your life was in danger. I can't, of course, let him and his confederate go, and you must appear in court when summoned, and give your testimony. It would be wrong to allow these fellows at large again."

In due time Lazy Holan and Darby Day were tried for burglary and felonious assault, found guilty, and sentenced for ten and eight years, respectively, at hard labor in the Eastern Penitentiary.

Mrs. Gabble and her cronies were astonished when they heard that on the trial the miser Jew had pleaded—yes, actually pleaded—that the prisoners might be allowed to go free; that they might have a chance to make amends for the various mischiefs they had wrought. One of the papers reported that, after giving his testimony, Feldstein said to the judge: "Ef you vill led dese unhappy men go, I vill find a friend who vill gif dem money to dake dem to de Vest or some oder nize

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"WRITE THE CHECK," SAID MIKE, "AN' SIGN IT."

blace, vere dey can durn ofer some new leafs and become good ziticens." It is on record that while the judge appreciated the Jew's kindly spirit, he said that it was best for the law to take its course.

Neither did the appeal affect Feldstein's general reputation favorably.

"That man Feldstein," said Mrs. Gabble to her cronies at a missionary meeting assembled, "is a hypocrite. He knew that the judge could not free two felons found guilty by a jury." And voiced thereby the public opinion.

In the fall of that year a disastrous fire broke out in Marbletown, sweeping away factories, mills, stores, and dwellings, in which scores of workmen and their families were sheltered. More than two hundred men, women, and children were driven half clad into the streets, leaving behind them everything they could call their own. Much was done by the well-to-do residents whom the fire had spared, and food and clothing and shelter were provided for the houseless; but it was soon found that much more remained to be done. A committee was appointed to raise funds, and a part of what was at once needed was collected after many days. Two members of the committee, after much deliberation, called upon Isaac Feldstein.

"I am fery sorry," said Isaac, who had just returned from a two weeks' business trip to the West, "dat I gannot do no more at present than to gif you ten dollar to relief de poor people, but——"

"Yes, *but*, Mr. Feldstein," said Deacon Doubledot, spokesman; "but you

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have plenty, and are surely able to give many times as much as you offer."

"If I could I vould," said Isaac. "But vot is mine is not all mine own, and I cannot ven I vant put my hand upon it. Yet I can gif you a letter to a frient who may do someting better."

So he gave them this letter to his friend in Pilpoodle:

*My dear Jacob Steinfeldt:* A fire has come to this town and many peoples are out of house with no clothing and not enough food. Besides they have not enough shelter. I hope you will give to the Committee something to help. If you can give $5,000 it will help much.

I am your friend,
ISAAC FELDSTEIN,
Marbletown, Pa.

P. S.—They need decent houses more than anything else. I. F.

Mr. Feldstein read a part of the letter aloud to the committeemen before he enclosed and directed it, but omitted the $5,000 clause.

"Yes," said Mr. Doty, in making his report on the next day, "I found Mr. Steinfeldt an intelligent, affable young fellow, of very pleasing exterior—evidently a man of the world in the good sense. When I handed him the letter he glanced at the superscription and smiled. 'I see,' he said, 'this is from Uncle Feldstein. He is a very eccentric man, but, sir, a mighty good man.' Then he opened and read the letter, and, excusing himself, left the room with a smile spreading all over his face. This made me think that there was a joke somewhere; but Mr. Steinfeldt returned in five minutes, and, with the smile still there, handed me his check to my order on the National Bank of Pilpoodle. He went with me to the bank—and, gentlemen of the committee, here is the money."

The report that the Jew miser had been the means of adding $5,000 to the fire sufferers' fund was not long in gaining wide circulation. Mrs. Gabble and her cronies heard it, but lost little breath in talking about it. They hadn't the breath to spare.

"Anyhow," said Mrs. Wedon, "Feldstein didn't give the $5,000. All he gave was a miserly $10. The check was signed by Feldstein's nephew; but, of course, he's a Jew, too. Really, there are Jews and Jews, Mrs. Gabble."

Mrs. Gabble had given nothing to help the sufferers except some cast-off clothing that she was about to throw away.

Soon it became painfully evident to the people of Marbletown that something must be done to afford the fire sufferers better shelter than a damp cellar here, a chilly garret there, and somewhere else a comfortless room in a shanty with chinky walls and leaky roof. Coughs and colds were becoming more and more common every day, especially among the children. Then diseases bred of uncleanliness made their appearance, and the dread of an epidemic of infectious ailments took hold of the citizens. Another public meeting was called. The lawyers, doctors, preachers, mill-owners, factory moguls all turned out and took part in considering the question, "What shall we do about it?" All sorts of projects were considered. Tents were talked of, but the medical men were opposed. Factory people didn't know how to live in tents. "Then we must put up a few large frame buildings," one man suggested.

"How about the land?" a dozen asked.

"Who'll furnish the money for building?" asked another dozen.

"The rich factory owners, the wealthy mill-owners, all of whom have had their insurance money paid, and are now erecting new buildings, largely on credit—they should act liberally," said the Methodist parson.

And so it went on for an hour.

"This is slow work," said Dr. Bolus. "The owners of vacant lots—dozens of them—might step forward."

Some of the citizens began to move toward the door. Just then a strident voice was heard—a voice evidently that of a man "unaccustomed to public speaking." Few present had heard it before; but as the form of the speaker became visible in the distance, there were many who recognized in it the short, ungraceful figure of Isaac Feldstein.

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When the noise occasioned by the outward movement of a score of men anxious to leave the room had somewhat lessened, Mr. Feldstein succeeded in gaining the ear of the meeting.

"Mister Bresident," he said, "I yoost rise, wid your permit, to make a few words by way of observe, dat dese poor peoble are suffering, and vill gontinue to keep on suffering until de vactory and de mill-owners can finish building and are brepared to put up twelling-houses for deir vorking peoble. Dot is yet some time in de future alretty, I dink. In de meanwile also comes danger of disease, not only for de vorking peoble by demselfs, but likevise for oder peobles besides. Now, Mister Bresident, I haf a frent dot has an inderest in some lots in dis town. Eef it is de vish of de meeting for me to do so, I vill ask of him to gif to de town de use of de lant vot he has inderest in. He vill say to me all right, and den, Mister Bresident, on dot lant ve can bilt so many ant such large houses dot are needit for de peoble dot haf no good homes ant vill haf no embloyment only ven de vactories ant de mills are up. Den ven vork pegins dey can pegin to bay rent, ant feel once more again intedependent like as dey vas before de fire trowed dem in de streed."

Of course it was the wish of the meeting, as was plainly shown by the applause with which Isaac Feldstein's modest effort at oratory was rewarded. It was the wish of the meeting, and before two days had passed Isaac had not only reported a favorable reply to the request made of his friend, whose name was not divulged until some time afterward; but he had also—acting for his friend—set carpenters, masons, bricklayers, and other workmen to building comfortable houses on the land loaned to the town. The arrival of artisans—dozens of them—from adjacent towns, made it lively in Marbletown. In due time, after the Feldstein tenements had been completed and filled with workmen and their families, happy in the enjoyment of comfort such as they had been without for so long—in due time one mill after another, one great factory after another, reached completion. Machinery went in in short order, and operatives with it. Work well paid kept all busy, and the town was now entering upon a long season of such prosperity as had never been dreamed of, even by its dealers in real estate, who, as is well known, are the most sanguine of all who dream, waking or sleeping.

One day there was a terrible accident in the Eagle Machine Works, in which thirty workmen were badly hurt, five fatally. There was no hospital in Marbletown, and the only thing the authorities could do was to send the injured to the county poorhouse. This was already crowded and there was scant room even for the shelter of the wounded, and the need of greater facilities for the proper treatment of those needing surgical aid was forced strongly upon the attention of the public. On the morning after the accident this paragraph appeared in the columns of the "Marbletown Gazette":

"IF I COULD I VOULD."

"We are authorized by one of our citizens to announce that if, at a public meeting to be held at as early a date as can be fixed upon by the mayor, there can be promised the contribution of $10,000 toward the building of a local hospital—the work to be begun at once, he will bind himself to furnish whatever other sum may be needed to make the work complete. The citizen referred to is one who is abundantly able to fulfil his pledge, but does not wish to have his name made public at this time."

This announcement was a pleasant sur-

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prise to all the better people of Marbletown. The mayor was prompt in naming a day for the meeting, and before it had been half an hour in progress $30,000 had been subscribed. When the secretary of the meeting read the list of names, with the different amounts promised, there was hearty applause. Then, after a moment's silence, the chairman said:

"While we have reason to be proud of what has been already done toward providing for the town an institution very much needed, let us hope that we shall hear from the citizen who has promised through the 'Gazette' to furnish whatever funds may be needed to supplement the amount subscribed."

From a far-off point in the hall came the sound of a voice that had been once before heard here, when another mission of mercy was about to be undertaken. The speaker was Isaac Feldstein, who had but little to say, but without doubt meant every word of it.

"Mister Bresident," said he, after the noise of the people's welcome had subsided, "vot I haf bromised in de baper, namely, to make good vot is needit—dot is, de difference between de amount subscribid and de amount needit for to bilt de hospital—vill be retty vitout any vaste of time. Ve do not yet know vot de hospital bilting vill gost. Led it be as goot dan any oder in de country, vedder it gost more or gost less. Now, if Mister Bresident vill appoint a gommittee to dake sharge of de hospital money, I vill meed dot gommittee ride avay now alretty at once, and vill hand to dem my frent's sheck, vich is goot for $50,000. You vill onderstand dot dis sheck may not be altogetter large enough ven de exbenses are to be settled. Ef it is not, den I promise dot dere shall be anodder von rite avay."

The applause of the excited multitude was something to be remembered for a long time in Marbletown. Isaac Feldstein might be a Jew miser himself, but at least he had influence with people more liberal. He might not give to help the poor, but he surely induced others to give.

The committee was appointed, and to Squire Hardwicke, the chairman, Isaac Feldstein handed a check for $50,000 bearing the signature of Jacob Steinfeldt.

No time was lost. The very day after the meeting the committee set about to secure a suitable site for the hospital. A selection was made and a visit paid to the agent. In answer to a question in regard to price the agent said, "I am ordered by the owner of that piece of property to say that if it should chance to be the choice of the Hospital Committee, the price to them is nothing, and the deed will be placed in the hands of the committee at once."

"Who is the owner of the property?" asked the chairman of the committee.

"Mr. Isaac Feldstein."

This information created something of a sensation among the Marbletowners, who at once began an earnest search after motives. By no means would they admit that the "Jew miser" could have been swayed by mere public spirit and charitable impulse. "Probably," said Mrs. Gabble, "he has other lots around there and thinks that a fine hospital building will increase their value. Oh, I tell you, these Jews are smart!" This was the generally accepted explanation and not even the next development altered it. When the accounts were audited, it was found that the total cost of the building, including its interior equipment, which had been carefully attended to by experts under the guidance of some of the best physicians of the county, was $98,000. True to his pledge, Isaac Feldstein was not slow in depositing in bank to the committee's credit the sum of $18,000, which represented the difference between the $80,000 in hand and the total cost of the building. But the check was signed by Steinfeldt, and Feldstein was generally considered a mere intermediary, probably enjoying a commission on the transaction, legitimately or otherwise.

Isaac Feldstein kept on in the even tenor of his way, seldom making his appearance beyond the limits of his own little front yard, but always ready to respond vicariously to a call for aid to forward the interests of the town with which he had become

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identified. It had come about that it was no uncommon thing for the clergymen, the lawyers, and the doctors to drop in upon him for a chat, and they soon became satisfied by personal intercourse with him that his want of culture was amply made up by his keen business foresight, his ready wit, his sympathetic nature, and his readiness to extend the helping hand to those in distress. Still he was, in some respects, a puzzle.

Judge Barton, a plain, farmer-like gentleman of the old school, was much interested in Feldstein, and one day, meeting him in a friend's office, he sought to become better acquainted with him, and here is set forth a part of the conversation between the two:

"Mr. Feldstein, you have done a great deal of good in this community, and have prompted many others to do good. Have you always acted kindly toward others without any expectation of being rewarded?"

"Jutch, I do a kindness pecause I know dot it vill pay me. You see, I am selfish. I gif in order dot vot I gif shall come pack to me vid interest. Eef I hellup a man in distress I do it pecause I may some day be also like dot man in distress, and I shall vant help. See. Eet is all selfishness, Jutch."

"Ah—there's the Jew nature," said Mrs. Gabble and her set, when this conversation was reported.

Yet it was Feldstein (in the name of Steinfeldt) who headed the subscription list for the establishment of the Athletic Club. It was Steinfeldt's potent checks, administered through Feldstein, that kept the Day Nursery on its feet, and provided the funds for the Pure Milk Society, the Free Ice Society, and the Fresh Air Society during that awful August when cholera infantum and kindred diseases made such a sweep among the Marbletown babies. When the local Grand Army post got into its famous financial hole through the utter failure of its elaborate fair, who bought out (at the Fair prices—which are not the same as fair prices) nearly the whole offering of tidies, quilts, apple pies, and factory-made candies? Steinfeldt again, through Feldstein, and saved the situation for the old soldiers.

There was money to be raised for a sewer system. Bonds were issued, but did not sell, for there was a material legal flaw in them. The authorities were in despair—until Feldstein got Steinfeldt to take a large proportion of the entire issue, flaw and all. "And there you are," said Mrs. Gabble; "just as soon as the flaw was fixed, a year afterward, the bonds advanced in price; you let these Jews alone for making money." Draper, the local dry goods merchant, became involved financially, and saw no prospect but the loss of a lifetime's honest effort. In the face of his admitted insolvency, Steinfeldt, through Feldstein, lent him enough to tide him over. "I'll bet he got a chattel mortgage," said Mrs. Gabble, "and I suppose he asked twenty per cent. interest."

In the course of things Feldstein died. His will provided for the hospital, provided for the Day Nursery, and the Free Ice, Fresh Air, and Pure Milk funds, provided for Hopper and for a dozen town dependents, provided for a new town hall, and exploded the Steinfeldt myth by showing that the latter had been "a faithful agent," and leaving him a competency. But the will showed further that the testator had large amounts out at legal interest, well secured, and Marbletown's comment stopped at that fact.

"He could afford to give a few dollars to charity now and then," was the public opinion, again voiced by Mrs. Gabble.

One day Draper said in the presence of the committee appointed to administer the Feldstein Hospital Fund:

"This man Feldstein was a level-headed, far-seeing business man, with a heart as big as a bushel-basket. He was public-spirited and charitable. Nobody knows what he did in private benefactions, except that we know they were large. But we all know what Marbletown owes to him, and I think that he ought to have a memorial tablet in the new Town Hall, or a monument in the Square."

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"I'LL BET HE GOT A CHATTEL MORTGAGE," SAID MRS. GABBLE.

There was an astonished silence in the committee-room, which no one seemed willing to break. All eyes were turned to the Chairman of the Committee, General Mills, the head of the great manufacturing plant, the leading member of the richest church, the head of all the public committees almost by tradition. He headed everything, except subscription lists, for he was the meanest man in the town as well as the biggest, socially.

"What was that, Mr. Draper?" said the General, finally.

Draper quaked inwardly before the crushing grandeur of Marbletown's leading citizen, but stuck to his guns.

"It was only a suggestion," said he. "I thought some public acknowledgment might well be made of Feldstein's charities."

"Ah," said the General, "rather a delicate question. I am somewhat in doubt as to the propriety of such—er—rather—what shall I say—such miscellaneous and ill-considered—er—kindnesses as we have heard of as emanating from the late Mr. Feldstein. Of course, this Hospital and the Town Hall legacy were matters very well conceived, but there are tales of much small private assistance rendered to individuals which I cannot refrain from characterizing as irregular—er—doubtful—er—perhaps dangerous. I am in doubt if financial assistance rendered to individuals in need of it is a real kindness,—er—it tends to encourage shiftlessness. I never needed any such assistance. But, in view of the large bequests to the Town Hall and Hospital funds, I should be willing to have a resolution of acknowledgment spread upon the records of this committee——"

"Mr. Draper spoke of a memorial tablet, or a monument," said one of the committee.

"What!" shouted the General—"a monument to a Jew money-lender! Monuments are for representative citizens, Mr. Draper!"

Draper weakened visibly. "I don't know why you should call him a money-lender," said he. "That infers usury, and no one ever knew of Feldstein asking more than the legal rate. Of course he was always careful about his security, but that's only business. If it were one of ourselves, we should call such transactions 'investments,' and the man who made them a capitalist. Why should you call Feldstein's investments 'loans,' and call him a 'money-lender'?"

"Wasn't he a Jew?" thundered the General. "Don't we all know that he was a Jew of the Jews?"

"Well—yes—that's so," said Draper, bending to the storm. "Feldstein was a Jew, of course."

And so the Marbletown Town Hall—which is now the City Hall—and a building famed throughout the State, has no memorial tablet in it save that which gives the names of the mayor, the common council, and the architect.

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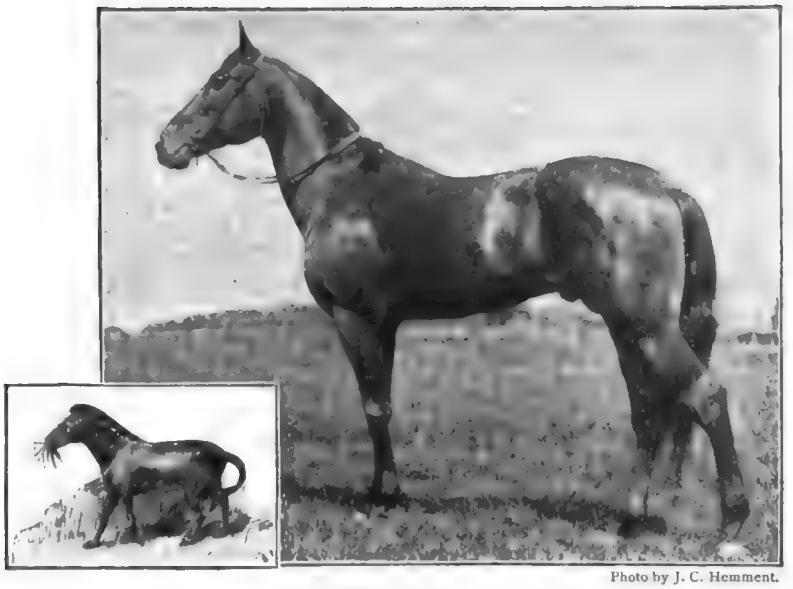

Photo by J. C. Hemment.

THE HORSE AND ITS ANCESTOR.

# THE DESCENT OF THE HORSE.

## TRACING THE HORSE'S HISTORY 2,000,000 YEARS.

By Theodore Dreiser.

Among the stories of evolution there is none more interesting than that of the horse—the animal concerning whose descent Huxley preached, and the facts concerning which stirred the world a score of years ago. Huxley did not have all the data wherewith to prove that the horse of to-day has come to us through many changes, and that his ancestors were once no larger than foxes, but with the few details he had he was able to convince the open-minded and gain for himself, among the unscientific, a large measure of fame by this one paper alone. Since Huxley's day, however, the proofs have been coming in fast, so that to-day there is no longer doubt about the matter.

In the American Museum of Natural History, in New York, are several cases of fossil bones which tell the horse's natural history much better than any scientific paper could. The casual observer may see there a series of skulls of horses which ascend in size from the first, which is no larger than that of a fox, to the last, which is that of the present-day horse. In the same place may be seen a series of skeleton feet, the smallest being about as large as would carry a fair-sized fox, the largest the hoof of the present-day horse, between which there is no break in the matter of ascent or evolution. Each one is only slightly different from the other, and yet, as the series progresses, one sees that toes disappear and bones become larger, until, at last, instead of having a horse's foot with four toes on the fore feet and three on the hind, we have a horse's foot with only one toe so enlarged that it is now called a hoof, but with traces of the other now nearly vanished toes still in evidence. There is also a case containing the skeleton of one of the very earliest known horses—an animal that must have lived several million years ago at the least, and probably a great many more. Yet a student of anatomy could take this same small

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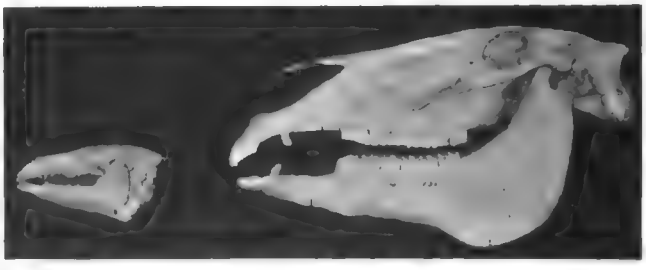
THE DEVELOPMENT OF THE HORSE'S FEET.

The illustrations on this and the opposite page trace the evolution of the horse from the earliest known stage of development until the present day. On the extreme left is shown the fore and hind feet of the Eocene horse. The fore foot had four well-developed toes and vestiges of another (the first digit or thumb). The hind foot had three toes and vestiges of another (the fifth digit). We next see three toes on each foot and vestiges of a fourth. All three reach the ground. To the left of the second illustration are shown the hind feet of the upper Miocene horse. The central toe is much enlarged, the side toes no longer reach the ground, and all traces of the fifth digit have disappeared. On the extreme right is shown the foot of the modern horse.

skeleton and trace with its aid every bone in the body of the horse of to-day. All are there, either entire or in part, and the skeleton, if enlarged, could readily be mistaken for a present-day horse's skeleton, with, of course, the exception of the feet.

This remarkable assemblage of the facts of the case represents one of the most interesting portions of the scientific labor of the day. It involves the discovery of the large prehistoric lake beds of the Rocky Mountains, and the arduous working of the same by scientists of the widest experience and ability. The collection has only recently been completed, and it is but now that the evolution of the horse may be said to be proved. The story as a whole is exceedingly novel, and may be told as follows:



SKELETON OF THE HEAD OF THE FIRST HORSE (THE SIZE OF A FOX) AND OF THE MODERN HORSE.

There were no horses in this country when America was discovered, and yet the horse had its origin here. This fact has been recently established by American scientists, who have unearthed a complete skeleton from the Bad Lands of Wyoming, of one of the earliest ancestors known. This early horse has been named Orohippus, and must have lived not less than two million years ago. He has four toes on his fore feet, and three on his hind feet. There must have been still earlier horses than those yet discovered, having five toes on each foot, for this was the original form of all mammal feet. At the present day there are traces of these vanished toes in every horse.

At the time when the horse was a small animal the size of a fox or less, this country was largely a marshy tropical region, covered in part by many lakes and great rivers, and dominated by animals of gigantic form. The vegetation was much the same as it is to-day in the South. Many of our exotic plants were common. The little horse fed upon tender grass and leaves. He inhabited the plain rather than the jungle, but the plains in those days were soft, and more or less marshy. Our Sierra and

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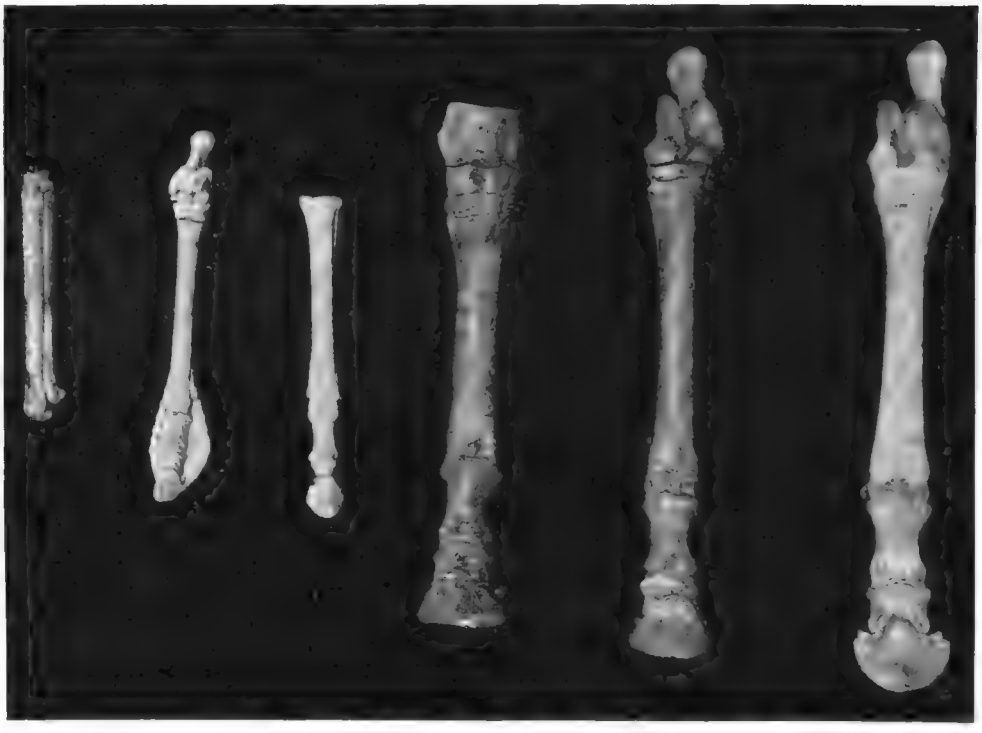

THE DEVELOPMENT OF THE HORSE'S FEET.

Rocky Mountain ranges and our wide stretches of dry prairie were not in existence. The great hoof of the horse is proof of how gradually the earth became hard. In those days of soft earth he needed the five toes which nature had given him. All the mammals of that time had these five toes, which served, among other things, to prevent their sinking in the mud.

The food the horse ate did not require grinders, so he did not have them. He needed teeth more for grazing and defence than for chewing. In those days the two canine teeth, which are now commonly absent in mares and are undeveloped in all horses, were then long and formidable. His back teeth were then imbedded in his jaws by long roots. They had short crowns with comparatively smooth surfaces, and were without any trace of cement.

From this time on the evolution of the horse has been marked principally by his growth in size, the elongation of his head and neck, changes in his teeth and in his legs and feet. Aside from these, the anatomy of the horse of to-day could be very well illustrated by the skeleton of the Orohippus, small as it is.

The reasons for the horse's growth in size are not difficult to trace. It is thought that being subject to pursuit by larger animals and attack from all sides, it was compelled to run fast and often. This was its principal means of defence in that day of ponderous beasts. Such exercise naturally enlarged the muscles of the limbs and body. Their enlargement and use required the eating of more food, and gave the appetite for it. There followed a natural expansion of the digestive organs. The veins, arteries, and every channel by which the nourishment is supplied to the system grew to meet the increasing requirements. Thus through millions of years the body enlarged. The direction which motion takes in the legs of the horse, coupled with the use and growth just described, is the supposed reason for their

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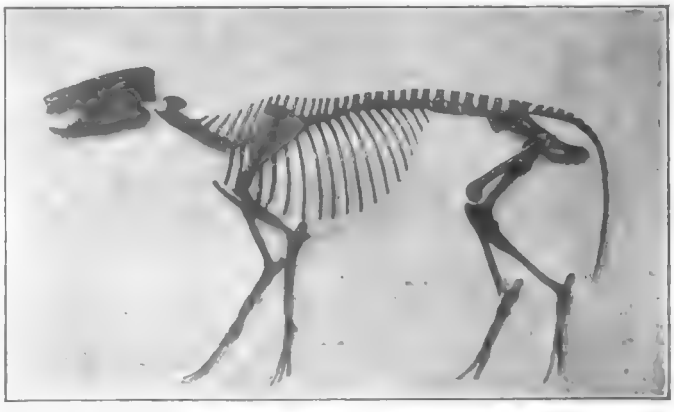
extension. As the body was lifted higher from the ground by the growing legs, the horse was compelled to reach constantly in grazing and in the cropping of overhanging branches, and its neck was developed by the process.

In the matter of the teeth, the evolution is also apparent. The horse of to-day needs grinders with rough surfaces in the eating of hard food. The first horses ate the very tender vegetation which then formed their only food supply. But as grains appeared, and changed climatic conditions produced more rugged vegetation, the crowns of the teeth became broader and longer, and developed a rough surface. Many ages after the Orohippus, a coating of cement appeared upon the crowns of the teeth. In the process of chewing, this covering of cement was wrinkled, and gave to the horse its present form of grinding surface.

There is a difference in the formation of a horse's fore leg to-day and that of its earlier ancestors. In the fore leg of the earliest known horse there were two bones, the radius and ulna. These were as distinct and separate as they are in a man's forearm to-day. At a later period the ulna is smaller and the radius larger. At a still later period skeletons discovered show that the radius had become the chief bone and the ulna hung like a pendant. The lower half of it had entirely disappeared. To-day the fore leg of the horse seems to possess but one bone. Examination, however, will disclose the upper end of the ulna still united to the radius. Traces of the lower end of the ulna can be found in the foot of the modern colt. A like change occurred in the hind legs. The tibia remained and now forms the lower portion of the leg, while the fibula, which was in early ages a complete bone, has almost disappeared.



SKELETON OF THE HORSE IN THE EARLIEST KNOWN STAGE OF DEVELOPMENT.

Many causes worked together to effect the evolution of the horse's feet. In the first place, as the mountains lifted up and the lakes were drained from certain portions of the earth, the ground became harder. Wider and drier plains appeared, over which these little horses could range. Therefore, finding food and safety on higher and harder ground, they avoided marshy places. This affected their feet. In travel, the exercises of their limbs threw their weight largely upon the third toe, which developed at the expense of the others. Accordingly, the latter became smaller and smaller, through the ages, until they eventually disappeared. The present foot of the horse is the old third toe. Its hoof is the enlarged and hardened nail.

It is impossible to tell why the horse should have vanished from the country where it originated and thrived, and how it happened to reappear in Europe to return to its first home with the arrival of the Spaniards with Cortez. It may have found its way into Europe across the land which was once where Bering Strait is now.

If this is true, the horses, left to themselves, evolved to their present stage and vanished as most other animals have done when the perfection of the type had been reached. Those that crossed into Europe were preserved by the uses to which man has put them.

For hundreds of years horses have been found with what were considered strange deformities, for which

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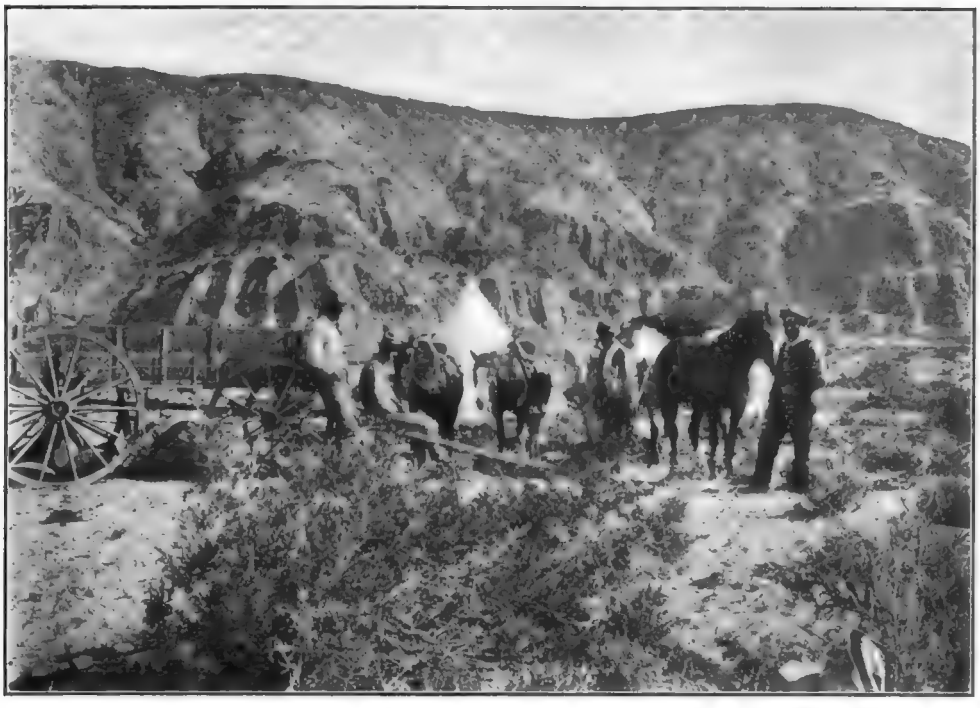

THE FOSSIL BEDS IN WYOMING WHERE THE PREHISTORIC REMAINS OF THE HORSE WERE FOUND.

no explanation could be given. It was the fact that these freaks existed that first called the attention of Professor Marsh, of Yale, to the structure of the horse's foot. He found upon examination that in every case there were evidences of toe formations common to earlier forms of mammals. His knowledge of evolution led him to suspect that the horse of to-day could by this means be shown to have descended from some earlier forms possessing toed feet. It was about this time that efforts were made by a few scientists to open the fossil beds in the Bad Lands of Wyoming.

In the fall of 1874 Professor Marsh started West with a small expedition. He was escorted into the wilderness by a few soldiers, until they were stopped by a band of Indian chiefs, who opposed their progress. All efforts to cajole or influence them were futile. Professor Marsh was advised to abandon his expedition. At midnight, however, when the braves were sleeping, he stole from the tents with his little band, knowing that death would result in his detection. It was necessary to work rapidly, not only for fear of massacre, but because of the intense cold. They were obliged to cut holes in their frozen beards for the passage of food, and the water froze in the cups as they ate. A rich deposit of fossils was found, and the bones as they were unearthed were placed in heaps.

On the second morning Indian sentinels appeared on the surrounding hills. Outposts of the expedition brought reports of threatening preparations for attack. Professor Marsh was undaunted, however, and remained another day, in order to pack the bones collected so that it would be impossible to injure them in transportation. When this had been satisfactorily accomplished, he stole back through the threatening wilderness, and arrived safely in New Haven at last, with what proved to be the most important prehistoric remains. Among the fossils secured in face of such danger and hardship were the remains of certain of the four-toed ancestors of the horse, and it was these that created the conviction that the horse had its origin in America.

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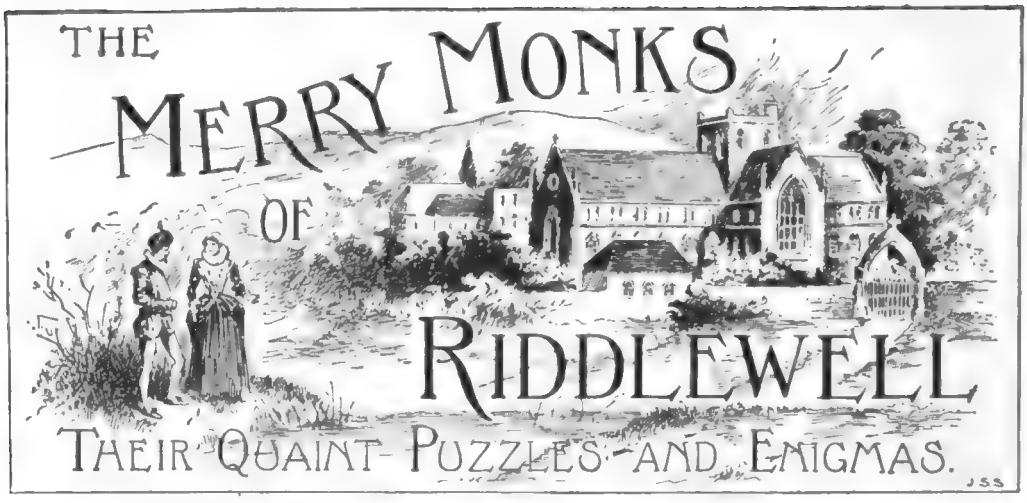


By Henry E. Dudeney.

"Friar Andrew," quoth the Lord Abbot, as he lay a-dying, "methinks I could now rede thee the riddle of riddles—an I had—the time—and—" The good friar put his ear close to the holy Abbot's lips, but alas! they were silenced for ever.

Thus passed away the life of the jovial and greatly beloved Abbot of the old monastery of Riddlewell. His merry doings are recorded in a curious manuscript that came accidentally into my hands a short time ago. The monks of Riddlewell Abbey were noted in their day for the quaint enigmas and puzzles that they were in the habit of propounding. The Abbey was built in the fourteenth century, near a sacred spring known as the Red-hill Well. This became in the vernacular Reddlewell and Riddlewell, and under the Lord Abbot David the monks evidently tried to justify the latter form by the riddles they propounded so well. The solving of puzzles became the favorite recreation, no matter whether they happened to be of a metaphysical, philosophical, mathematical, or mechanical kind. It grew into an absorbing passion with them, and, as I have shown above, in the case of the Abbot this passion was strong even in death.

It would seem that the words "puzzle," "problem," "enigma," etc., did not occur in their vocabulary. They were accustomed to call every poser a "riddle," no matter whether it took the form of "Where was Moses when the light went out?" or the squaring of the circle. On one of the walls in the refectory were inscribed the words of Samson, "I will now put forth a riddle to you," to remind the brethren of what was expected of them; and the rule was that each monk in turn should propose some riddle daily to the community, the others being always free to cap it with another if disposed to do so. Abbot David was, undoubtedly, the puzzle genius of the monastery, and everybody naturally bowed to his decision. Only a few of the Abbey riddles have been preserved in the manuscript, and I propose to select those that seem most interesting. I shall try to make the conditions of the puzzles perfectly clear, so that the modern reader may fully understand them, and perhaps be amused in trying to find some of the solutions.

### The Riddle of the Fish-Pond.

At the bottom of the Abbey meads was a small fish-pond where the monks used to spend many a contemplative hour with rod and line. One day, when they had had very bad luck and only caught twelve fishes among them, Brother Jonathan sud-

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denly declared that as there was no sport that day he would put forth a riddle for their entertainment. He thereupon took twelve fish baskets and placed them at equal distances round the pond, as shown in our illustration, with one fish in each basket.

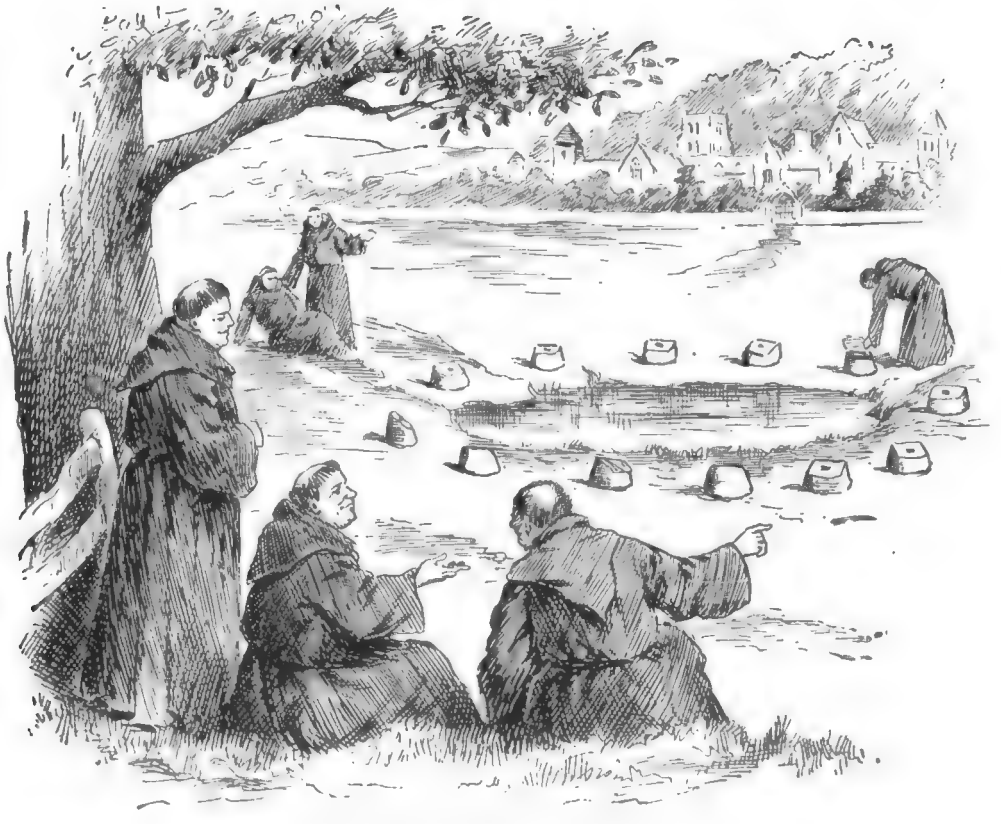
"Now, gentle anglers," said he, "rede me this riddle of the Twelve Fishes. Start at any basket you like, and, always going in one direction round the pond, take up one fish, pass it over two other fishes, and place it in the next basket. Go on again; take up another single fish, and, having passed that also over two fishes, place it in a basket; and so continue your journey. Six fishes only are to be removed, and when these have been placed, there should be two fishes in each of six baskets, and six baskets empty. Which of you merry wights will do this in such a manner that you shall go round the pond as few times as possible?"

I will explain to the reader that it does not matter whether the two fishes that are passed over are in one or two baskets, nor how many empty baskets you pass. And, as Brother Jonathan said, you must always go in one direction round the pond (without any doubling back), and end at the spot from which you set out.

### THE RIDDLE OF THE PILGRIMS.

One day when the monks were seated at their repast, the Abbot announced that a messenger had that morning brought news that a number of pilgrims were on the road and would require their hospitality.

"You will put them," he said, "in the square dormitory that has two floors with eight rooms on each floor. There must be eleven persons sleeping on each side of the building, and twice as many



THE RIDDLE OF THE TWELVE FISH BASKETS.

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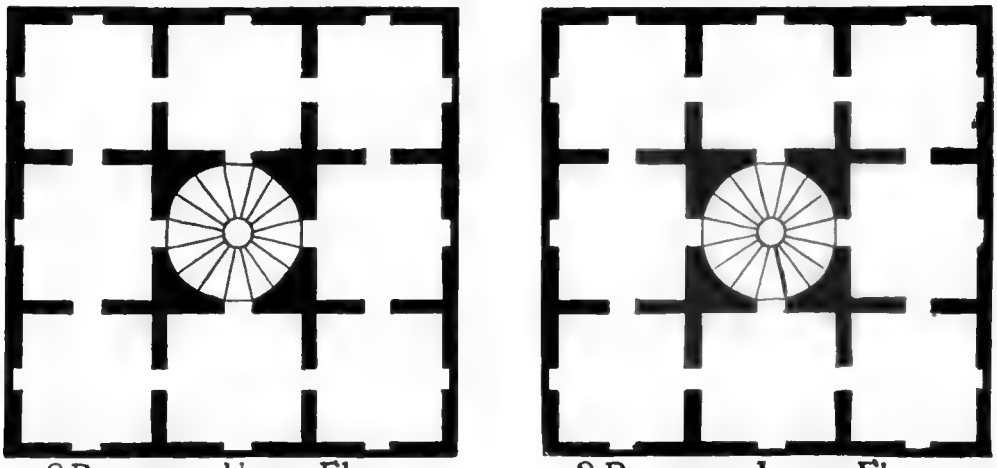
PLAN OF DORMITORY



8 Rooms on Upper Floor. 8 Rooms on Lower Floor.

CAN YOU SOLVE THE PUZZLE OF THE PILGRIMS, AND TELL HOW MANY SLEPT ON THE FLOORS OF THE DORMITORY?

on the upper floor as on the lower floor. Of course every room must be occupied, and you know my rule that not more than three persons may occupy the same room."

I give a plan of the two floors, from which it will be seen that the sixteen rooms are approached by a well staircase in the centre. After the monks had solved this little problem and arranged for the accommodation, the pilgrims arrived, when it was found that they were three more in number than was at first stated. This necessitated a reconsideration of the question; but the wily monks succeeded in getting over the new difficulty again without breaking the Abbot's rules. The curious point of this puzzle is to discover the total number of pilgrims.

### THE RIDDLE OF THE TILED HEARTH.

It seems that it was Friar Andrew who first managed to "rede the riddle of the Tiled Hearth." Yet it was a simple enough little puzzle. The square hearth, where they burnt their Yule logs, and round which they had such merry carousings, was floored with sixteen large ornamental tiles. When these became cracked and burnt with the heat of the great fire, it was decided to put down new tiles, which had to be selected from four different patterns (the Cross, the Fleur-de-lys, the Lion, and the Star), but plain tiles were also available. The Abbot proposed that they should be laid as shown in our sketch, without any plain tiles at all; but Brother Richard broke in:

"I trow, my Lord Abbot, that a riddle is required of me this day. Listen, then, to that which I shall put forth. Let these sixteen tiles be so placed that no tile shall be in line with another of the same design" (he meant, of course, not in line horizontally, vertically, or diagonally) "and in such manner that as few plain tiles as possible be required."

When the monks handed in their plans it was found that only Friar Andrew had hit upon the correct answer, even Friar Richard himself being wrong. All had used too many plain tiles.

### THE RIDDLE OF THE SACK WINE.

One day, when seated at table, Brother Benjamin was called upon by the Abbot to give the riddle that was that day required of him.

"Forsooth," said he, "I am no good at the making of riddles, as thou knowest full well; but I have been teasing my poor

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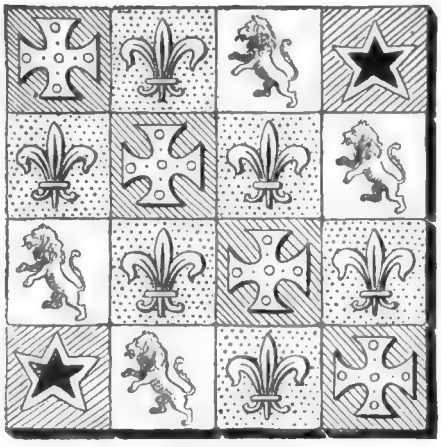
brain over a matter that I trust some among you will expound to me, for I cannot rede it myself. It is this. Mark me take a glass of sack from this bottle that contains a pint of wine and pour it into that jug which contains a pint of water. Now, I fill the glass with the mixture from the jug and pour it back into the bottle holding the sack. Pray tell me, have I taken more wine from the bottle than water from the jug? Or have I taken more water from the jug than wine from the bottle?"



THE RIDDLE OF THE TILED HEARTH.

I gather that the monks got nearer to a great quarrel over this little poser than had ever happened before. One brother so far forgot himself as to tell his neighbor that "more wine had got into his pate than wit came out of it," while another noisily insisted that it all depended on the size of the glass and the age of the wine. But the Lord Abbot intervened, showed them what a simple question it really was, and restored good feeling all round.

### THE RIDDLE OF THE CELLARER.

Then Abbot David looked grave and said that this incident brought to his mind the painful fact that John the Cellarer had been caught robbing the cask of best Malvoisie that was reserved for special occa-

THE CELLARER FELL ON HIS KNEES, CRYING: "PRITHEE, MY LORD ABBOT, FORGIVE ME!"

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"A BODY OF CRUSADERS WENT FORTH TO FIGHT," SAID SIR RALPH DE BOHUN.

sions. He ordered him to be brought in.

"Now, varlet," said the Abbot, as the ruddy-faced Cellarer came before him, "thou knowest that thou wast taken this morning in the act of stealing good wine that was forbidden thee. What hast thou to say for thyself?"

"Prithee, my Lord Abbot, forgive me!" he cried, falling on his knees. "Of a truth, the Evil One did come and tempt me, and the cask was so handy, and the wine was so good withal, and—and I had drunk of it ofttimes without being found out, and——"

"Rascal! that but maketh thy fault the worse! How much wine hast thou taken?"

"Alack-a-day! There were a hundred pints in the cask at the start, and I have taken me a pint every day this month of June—it being to-day the thirtieth thereof—and if my Lord Abbot can tell me to a nicety how much good wine I have taken in all, let him punish me as he will."

"Why, knave, that is thirty pints."

"Nay, nay; for each time I drew a pint out of the cask I put in a pint of water in its stead!"

It is a curious fact that this is the only riddle in the manuscript that is not accompanied by its solution. Is it possible that it proved too hard a nut for the monks? There is merely the note, "John suffered no punishment for his sad fault."

### THE RIDDLE OF THE CRUSADERS.

On another occasion a certain knight, Sir Ralph de Bohun, was a guest of the monks at Riddlewell Abbey. Towards the close of a sumptuous repast he spoke as follows:

"My Lord Abbot, knowing full well that riddles are greatly to thy liking, I will, by your leave, put forth one that was told unto me in foreign lands. A body of Crusaders went forth to fight the good cause, and such was their number that they were able to form themselves into a square. But on the way a stranger took up arms and joined them, and they were then able

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to form exactly thirteen smaller squares. Pray tell me, merry monks, how many men went forth to battle?"

Abbot David pushed aside his plate of warden pie, and made a few hasty calculations.

"Sir Knight," said he at length, "the riddle is easy to rede. In the first place there were 324 men, who would make a square 18 by 18, and afterwards 325 men would make 13 squares of 25 Crusaders each. But which of you can tell me how many men there would have been if, instead of 13, they had been able to form 113 squares under exactly the like conditions?"

The monks gave up this riddle, but the Abbot showed them the answer next morning.

THE RIDDLE OF ST. EDMONDSBURY.

"It used to be told at St. Edmondsbury," said Father Peter on one occasion, "that many years ago they were so overrun with mice that the good Abbot gave orders that all the cats from the country round should be obtained to exterminate the vermin. A record was kept, and at the end of the year it was found that every cat had killed an equal number of mice, and the total was exactly 999,919 mice. How many cats do you suppose there were?"

"Methinks one cat killed the lot," said Brother Benjamin.

"Out upon thee, brother! I said 'cats.'"

"Well, then," persisted Brother Benjamin, "perchance 999,919 cats each killed one mouse."

"No," replied Father Peter, after the monks' jovial laughter had ended, "I said 'mice'; and all I need add is this—that each cat killed more mice than there were cats. They told me it was merely a question of the division of numbers, but I know not the answer to the riddle."

A RING WAS MADE WITH CHALK ON THE FLOOR OF THE HALL.

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The correct answer is given, but it is not shown how they arrived at it.

THE RIDDLE OF THE FROGS' RING.

One Christmas the Abbot offered a prize of a large black jack mounted in silver, to be engraved with the name of the monk who should put forth the best new riddle. This tournament of wit was won by Brother Benedict, who, curiously enough, never before or since gave out anything that did not excite the ridicule of his brethren. It was called the "Frogs' Ring."

A ring was made with chalk on the floor of the hall, and divided into thirteen compartments, in which twelve disks of wood (called "frogs") were placed in the order shown in our illustration, one place being left vacant. The numbers 1 to 6 were painted white, and the numbers 7 to 12 black. The puzzle was to get all the white numbers where the black ones were, and *vice versâ*. The white frogs moved round in one direction, and the black ones the opposite way. They may move in any order one step at a time, or jumping over one of the opposite color to the place beyond, just as we play draughts to-day. The only other condition is that when all the frogs have changed sides, the 1 must be where the 12 now is, and the 12 in the place now occupied by 1. The puzzle was to perform the feat in as few moves as possible. How many moves are necessary?

These, then, are a few of the ingenious riddles that I deciphered from those old manuscripts. I, with a little thought and trouble, have solved them all, and you will doubtless do the same.

I will conclude this article in the words of the old manuscript: "These be some of the riddles which the Monks of Riddlewell did set forth and expound each to the others in the merry days of the good Abbot David."

(*The solutions to the puzzles in the above article will appear in* EVERYBODY'S MAGAZINE *next month.*)

## A WEATHER FORECAST.

THEY strolled along one winter day,
A man and maid together,
And as they sauntered through the lane
They talked about the weather.

One summer day these two went by,
Strolling once more together;
They looked into each other's eyes,
They still talked of the weather.

"My own, the future's bright to me,
Since we shall be together;
For us no dark or dreary days;
Our glass is set 'fair weather.'"

"Dearest," she said, "altho' our hopes
Are bound up now together,
We must expect some wintry days,
As well as sunny weather."

And so they started off to share
Their griefs and joys together;
They loved each other all their lives,
Through fair and stormy weather.

MRS. DONALDSON.

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By Robert Duff.

Not the first, but certainly the first famous royalty who went out in person at the head of her troops to fight was Queen Boadicea. Hence her place of honor at the head of this article.

To-day kings and queens have practically ceased from leading their armies into the fray, the last of the fighting sovereigns being the great Napoleon. Of course, the Emperor William I. of Germany and Napoleon III. accompanied their respective armies in the Franco-Prussian War, but less as commanders than mere spectators; and equally, of course, the present Emperor William may do the same thing, should Germany go to war again, though I very much doubt whether he would be content to remain a mere spectator—a *rôle* that scarcely seems to fit his character.

But, if the supreme head of the state is no longer a fighting man, the royal families of Europe, and especially the royal family of England, have all through the present century given their countries brave and capable warriors.

It was in the wars directly following on the French Revolution, and before the rise of Bonaparte, that the Duke of York, the uncle of Queen Victoria, especially distinguished himself. The Republican armies were already successful in all parts of Europe. But at the Troisville redoubts, near Cambray, on the Belgian frontier, they met one of their severest repulses, the opposing hosts being commanded by the Duke of York, who, during the engagement, showed remarkable bravery.

The Duke of Kent, the Queen's father, and brother to the Duke of York, was a famous warrior in his day, courageous to a degree, and noted for the severity with which he maintained military discipline. He saw active service on more than one occasion, but especially distinguished himself in the expedition against the French in the West Indian Islands. The impetuous bravery with which he led the flank division against certain important posts, in Martinique, became a by-word in the army.

The Crimean War saw no less than three members of royal houses at the front —the Duke of Cambridge, the Duke of Saxe-Weimar, and Prince Napoleon Bonaparte. The first success of that terrible and misguided war—the battle of Alma—saw all three actively engaged. The

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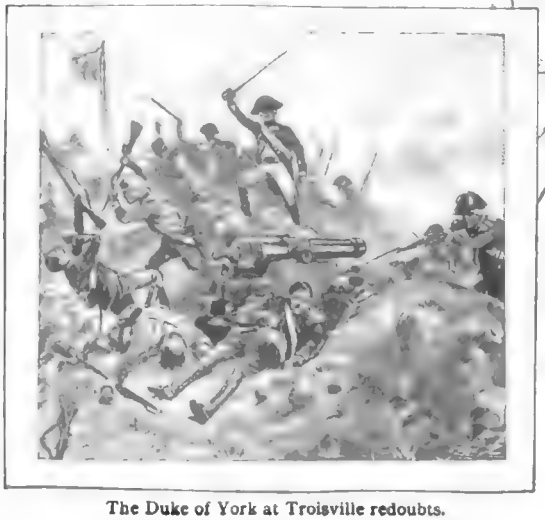
Duke of Cambridge did splendid work in the famous storming of the great redoubt. At a critical stage of the battle he and Sir Colin Campbell received orders to take this difficult position. The Guards and Highlanders advanced in splendid order, and, cheered by their commanders, dashed up the slopes reckless of shot and shell. They encountered the Russians, muzzle to muzzle; scaled the redoubt; and, driving all before them, won for the allies one of the most splendid of their victories. Prince Napoleon also carried out one of the most important movements of the battle; that of obtaining possession of the heights between the enemy and the sea.

The Duke of Kent gallantly leading the troops at Martinique.

H. R. H. the Duke of Kent, father of Queen Victoria.

H. R. H. the Duke of York, uncle of the Queen.



The Duke of York at Troisville redoubts.

At Inkerman all three princes were again in the thick of the fight. The Duke of Cambridge and his redoubtable Guards were ever in the hottest part of the battle, and it was largely due to them that the small English force was not completely annihilated by the overwhelming Russian columns

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before the French succeeded in coming to the rescue. The casualties were appalling, and the Duke himself was severely wounded, and had his horse shot under him.

The Duke of Connaught is another English prince of the present century who has gone out with his countrymen against the foe. It was rather at variance with the wishes of his family that he determined to accompany Sir Garnet, now Lord, Wolseley on the expedition which came to so triumphant a close at Tel-el-Kebir. Though present at that brilliant engagement, the Duke was offered no chance of peculiarly distinguishing himself. Stationed with the rear-guard, he was forced to watch the battle from afar. At the commencement of the Transvaal War it was widely believed that an important command in South Africa would be given to the Duke. It was not to be; but when Lord Roberts was ordered to the seat of war, the commandership of the forces in Ireland was offered to, and accepted by, the Duke.

H. R. H. the Duke of Cambridge (at the time of the Crimean War).

Prince Edward of Saxe-Weimar.

The Duke of Cambridge wounded at Inkerman.

Prince Napoleon Bonaparte.

**The story of Prince Louis Napoleon is too well**

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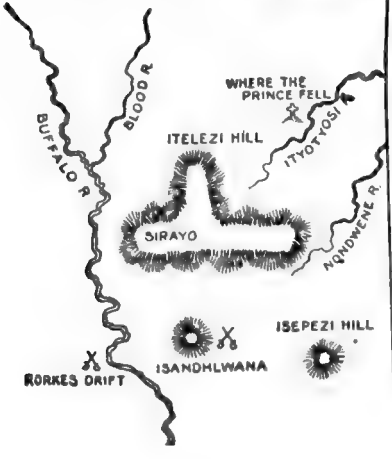
The Emperor William and the Crown Prince of Prussia watching the battle of Sedan.

The Crown Prince of Prussia (afterwards the Emperor Frederick of Germany).

known to need a detailed recapitulation here. When the Franco-Prussian War broke out he accompanied his father to the frontier, and, at the first engagement, the skirmish at Saarbrück, received his famous baptism of fire. "Lulu," as the impertinent Parisians styled their heir-apparent, watched the conflict from the heights overlooking the battle-field, and when the Prussians, after a sharp resistance, retired, he passed in solemn procession, together with his father—that adept in theatrical *coups*—and the imperial *cortége*, before the French troops. Shortly afterward arrived in Paris Napoleon's celebrated despatch, which set all Europe laughing: "Louis has undergone his baptism of fire," or words to that effect.

The Prince Imperial. (Photo by London Stereoscopic Co.)

In 1879, when the Empire had fallen



The death of the Prince Imperial in Zululand.

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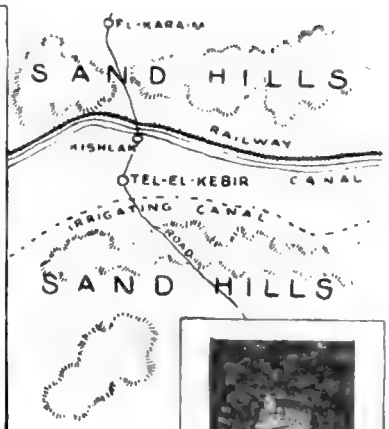
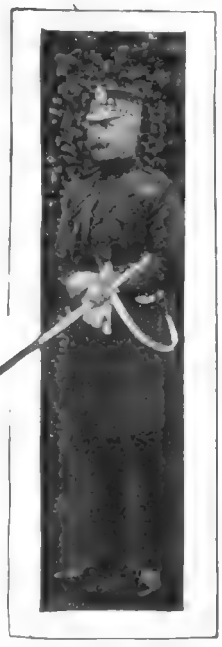



The Duke of Connaught at the battle of Tel-el-Kebir.

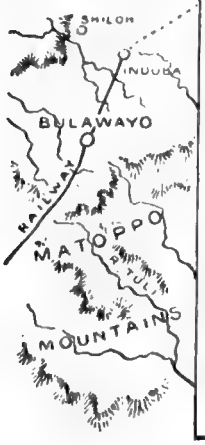


The Duke of Connaught at the time of the Egyptian Campaign.

(Photo by R. Milne.)

to pieces, and the Emperor and Empress had taken up their abode in England, the Prince Imperial, as his adherents called him, asked leave to serve with the British Army in Zululand. It was an awkward request to accede to, and yet, considering the friendly relations between the English Court and the exiled Bonapartes, impossible to refuse. The Prince proved a great burden to Lord Chelmsford and his officers, who had strict injunctions to restrict his movements as much as possible, and never to allow him out of camp, except under a strong escort. Then came the catastrophe. The Prince somehow got permission to make a reconnoissance unaccompanied by any superior officer. He foolishly disobeyed the instructions given him at the outset, and, as a consequence, fell into an ambush of Zu-

Prince Alexander of Teck.



Prince Alexander of Teck in the Matabele War.

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Prince Henry of Battenberg being borne to the West African Coast suffering from fever.

The melancholy death of Prince Henry of Battenberg is still fresh in the minds of most people. When King Prempeh of Ashanti became refractory, and an expedition was about to be sent out for the purpose of bringing him to order, Prince Henry and Prince Christian Victor volunteered their services, and in due course arrived at Cape Coast Castle. The march into the interior began, and soon the vicious, enervating climate began to tell on the Prince's constitution. The expedition was successful, without the loss of a drop of blood; but Prince Henlus, and was speared to death before rescue could arrive. The affair caused great consternation in England, and the British officer in command of the detachment was courtmartialed—a mere matter of form, as every one knew that the responsibility for his own death lay with the victim.

Photo by Hughes & Mullins.

Prince Henry of Battenberg. The last photo taken before his departure for the Ashanti Campaign.

Count Gleichen in his khaki uniform.

Count Gleichen, the Queen's nephew, shot in the neck at the battle of Modder River.

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ry's health had been fatally undermined. From Kumassi he was borne slowly back to Cape Coast Castle, and, arriving there, seemed once again to gather strength. A sudden relapse brought about the end, and, on the 20th of January, the Prince died, the only victim of that little expedition.

In the South African War no less than five princes are actively engaged: Prince Christian Victor, Princes Adolphus, Alexander, and Francis of Teck, and Count Gleichen. Most of them have already been at the front on more than one occasion. Prince Christian served in

Photo by Bassano
Prince Christian Victor.

Prince Christian Victor arriving at Durban with despatches from the Mooi River.

Ashanti, the Sudan, and other minor campaigns; Prince Alexander of Teck did good work in Matabeleland, and his brother, Prince Francis, served as captain in the Egyptian war of 1897–98; while Count Gleichen had been previously engaged in various expeditions in the Sudan. In the Transvaal Prince Christian was appointed to the staff of Captain Percy Scott, at Durban, and has made himself useful by bringing despatches from the front to Maritzburg and Durban. Count Gleichen, who is, by the way, Queen Victoria's nephew, has had sterner experience. Under Lord Methuen, he was present at the early victories which attended that general's rather too impetuous march to the relief of Kimberley, and at the battle of the Modder River he received a nasty wound in the neck, from which, however, he soon recovered.

Photo by Gunn & Stuart.
Princes Adolphus and Francis of Teck.

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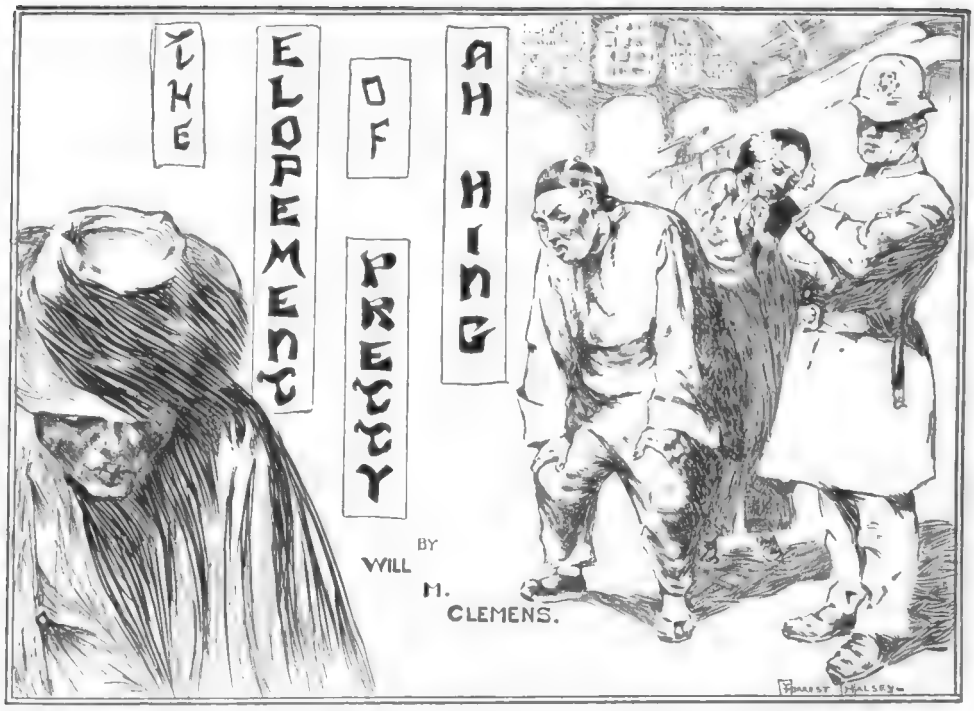


KWANG Po sat weeping in his attic. Tears glistened in his black eyes. Marks of other tears stained his yellow cheeks. He rocked his thin bones to and fro, in his stiff wooden chair by the window, from which he could look down into Doyers Street far below. He could hear the piping cry of the lily-bulb boy, the call of the kindling-wood man, the song of the duck-egg merchant, and occasionally he heard the shrill yells of the little white devils who strayed over from the Bowery to sell newspapers in the Chinese quarter.

He could see the great mob from his attic window; the thousands of human worms scurrying through Doyers Street, yellow men and yellow women, and white men and white women, and children of yellow and white-yellow, and white and yellow-white.

The human worms in Doyers Street were always hurrying—rushing madly, aimlessly, and as if from out one passageway into another and back again. The hurry of it all seemed very foolish to poor Kwang Po, with his thin bones and his red, wet eyes—poor Kwang Po who sat weeping in his attic by the window.

To forget is one of the lost arts, and Kwang Po failed utterly in some things. He could not get away from himself. He tried very hard, but in some strange way the tears kept coming, and his eyes saw only the brown dust and the blue mould on the window pane, and he could hear but the sobbing in his own throat, for his black eyes were glistening and his yellow cheeks were pitted with dead tears. The Great Sorrow was upon him.

Then from a neighboring attic came Wong Gee. He shambled through the narrow doorway and into the presence of Kwang Po, moving very slowly, rolling like a barrel, and pushing his fat frame into the room, as he had once rolled bales of cotton in the warehouses of his great uncle, Ham Soy, in Canton. Wong Gee breathed heavily, like an elephant, and one always knew of his approach by the noise of his nostrils, as it preceded him.

Kwang Po twisted his tear-pitted face about painfully to see the intruder, whereupon a strange gleam of light pierced his

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clouded brow, and his thin lips moved as if a smile had died still-born. His long yellow fingers entangled each other, and he clasped hands with himself in welcome to his neighbor.

"*Ho la Sin Shang!*" he whined, and the green bracelets on his wrists rattled as he shook his hands.

A guttural sound shot out from Wong Gee, from the very depths of him; for the sound seemed to have its origin in the floor beneath him, and to rise like a pain through his fat legs, and to tunnel its way through the waist of him, and to rush like a river along the pipes of his long, brown throat, and then to escape at last, between his crooked black teeth—to get away with an effort like the croaking of a siren whistle.

"*Ni ho la sai lo ko?*" said the croak.

"How are you, my younger brother?" the man of the fat legs had asked, at which Kwang Po bowed with great dignity, and unconsciously allowed his tears to fall with tiny splashes upon the red shoes of the Wong man.

"With myself, I am approaching sickness," whined the maker of tears. "I think soon may I be with the dead ones; alas! never will I become a *pak ye kung* (white-haired gentleman)." He picked up his cap from the floor with a groan and placed it upon his head as a mark of courtesy to his visitor; and as a further means of welcome he brought forth for the inspection of Wong Gee some small smooth boards to be used in the future as a part of his coffin.

He also brought tea for Wong Gee. The long yellow fingers handled the teapot skilfully, and filled the little thimble-cups upon the lacquer tray, and dropped the pot back into its wicker basket again. Then he bowed very low, holding the tray in his two hands. Wong Gee took the cup nearest him, and he too bowed very low, and they sipped the amber drink in silence.

They sat down together then—Kwang of the thin bones and Wong of the fat legs—and Kwang poured into the long ears of Wong a slow narration of his troubles—his troubles that had been, that still were, and of those that were to come. In the course of his narrative he went backward even to the days of his boyhood in the wonderful East land, where first he saw the shine of the morning sun.

It must be known that Kwang remembered very well indeed the days of his childhood, and he told Wong Gee of youthful sport in the village of Lok Tung, which means Broad East, and upon the maps made by the great and wise men at Pekin, Lok Tung was a small circle directly in the centre of a great square called the Province of Lok Tung.

His father had been a farmer, and his ancestors for centuries had also been farmers, and in the family plot of the Kwangs in the ancestral graveyard on the outskirts of Lok Tung the many dead ones were laid away in rows and tiers, with little alleyways between, and there were so many hundreds of them it reminded the Fan Kwais, or foreign devils, who came that way, of a Dutch garden of cabbages in the Low Country.

He grew reminiscent, and as he went on, he placed his yellow hands familiarly upon the knees of Wong, and his head turned like a weather vane, and he talked into the left ear of Wong Gee, and poured the story of his sorrows in a perfect shower of words over the defenceless head of Wong Gee.

"Even in the beginning, the luck of evil came near to me!" whined the maker of tears. "Even so quickly as my little mother brought home the gifted and illustrious Kong See, doctor of the Stars and Moon, who read for me the Heavens, as he had read the Heavens for my older brothers and even my father before them. Kong See said for me in his wise tongue whether there would come good or evil, in the days when I would grow to be great as a man, like my honorable father and my illustrious brother. But all my days have been evil and the luck of the stars for me has been vile from the beginning."

"Huh!" was the comment of Wong Gee as he brought forth a bag of snuff

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from beneath the folds of his blue silk blouse. "Huh!" he repeated when he had partaken liberally of the powder.

As he talked of his childhood Kwang Po had grown radiant of face, and there were moments when his great sorrow left him, only to return again, like the going and coming of a blush upon his cheek. He went on with his narrative:

"My honorable father, the old head, was a poor farmer in Lok Tung, and he could ill afford me to leave the toil of the meadow to occupy my hours with the schoolmaster. Sometimes in certain of the seasons the school I attended for hours two, as the morning came, but in the day mostly I tilled the soil for my father, in his wide fields of the rice and the mulberry, and the peas and the bamboo, and the sugar-cane."

Kwang heaved a long, deep sigh, and hastened with his narrative.

"One day I went with my cousins to Hong Kong, and with the great Six Companies we entered into an agreement, and with the consent of my honorable father, I made contract that the Six Companies send me with my cousins and other young men to the States of the United People. So I did leave my home-kin, my little mother and my illustrious brothers, and did make the long sailing across the wonderful green sea to the Golden East. In weeks, four, we left behind us the great house on the water, and on the land of the Oregon we walked, and to live there and work again in the city called as Portland we proceeded. But I tilled the soil no longer there, but instead cleansed the garments of the white men and the robes of the pretty women of the white men.

"Then began the evil days for me. I turned away my face from the great god Confucius, and I no more bowed my head to the golden joss of my people, for I went to the joss of the white Christians and the School of Sunday called the mission, which they said would be my abiding place forever. The Christians of the mission were good to me and kind to me, even to me, the poor son of a poor farmer of Lok Tung. They said to me I would be illustrious and honorable, even more honorable than my honorable father, and more illustrious than my illustrious brother.

"Of the months ten, after I came to the States of the United People, I then met at the School of Sunday, the Ray of the Starlight. My own people called her Ah Hing Cheng, she, the fair maid of the rose cheeks and the beautiful eyes. Like myself she became as the white Christians, and turned away from the joss of her great uncles, and she sat in the mission place in the corner with the women.

"I showed my teeth to her, likewise the white of my eye, and in return she laughed with me, and soon the love in our poor hearts became as a river flowing rapidly to the sea. Then happiness was mine, and my strong arms were always about her.

"Of the years four, I saw first my Ray of the Starlight, of the years three she took my arm to the mission place in wedlock and to the Peace Justice also in marriage we went a second time. Of the years two, Ah Hing Cheng, of the beautiful eyes and the cheeks of the roses, with me arrived in New York, the wonderful city, and in the little home of Doyers Street we have lived. Long time ago Ah Hing told me of the great city and the wonders of the great city, and to make happy days for her, I consented to come here with the Ray of the Starlight.

"Alas! the evil and the vileness again comes fourfold, for in the shining of the last silver moon, two strangers came to the great city from the west. Their garments dimmed the glory of the summer sun. They talked in many tongues. In the French they spoke with the easy tongue of the Cantonese. Wee Get and Wo Got were the names of the strangers. Many were the gold and silver coins they carried in their purses, and at the table of fan tan and the dominoes, they were great with their luck, and thus increased their fortunes, and they gave to their friends dinners and feasts and were the illustrious ones, both in the day and in the night.

"Black was the morning when Wee Get found my Ray of the Starlight. She

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looked upon him with her beautiful eyes. She trembled when he spoke words to her and he made fresh roses to bloom upon her cheeks. With her fan from the window she made signs to him, and often she passed away from my door to see the illustrious stranger from the west."

Kwang Po paused for a moment, whereupon Wong Gee folded his hands across his fatness and cried "Ho! Ho!"

Kwang Po proceeded with the tales of his great sorrow.

"My honorable cousin, Kwang Koo Chee, my friend, came to my door with the news for my hearing. He told me, with my very watchful eyes, to look closely upon my wife. 'Her beautiful eyes,' he said, 'were too often turned to Wee Get,' and I heard him truly, for the day of the next morning, I followed about with my cunning, and I saw Wee Get play his lover looks upon my Ray of the Starlight, and I followed her, like the dog of the sharp nose, to the railway place, where Wee Get was waiting.

THE ILLUSTRIOUS ONE.

"My eyes were then open widely, and I saw that she was to go away with him, and with a loud outcry I made haste to recover my Ray of the Starlight. I cried to the Blue-coat-man of the buttons in brass, and he followed as I wished and laid upon my Ah Hing Cheng the weight of his great hand. Wee Get then threw at me a defiance. He called me names of many dogs and he proclaimed Ah Hing Cheng as the wife of his own heart, and not of my heart, and he proclaimed that to San Francisco they were about to journey by the rail in search of peace and happiness."

"He! He!" burst out Wong Gee, shaking his fat sides with laughter, for he had foreseen the outcome of the romantic drama pictured to him by Kwang Po, and he imagined the Ray of the Starlight,

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"SO, SO, MY ILLUSTRIOUS NEIGHBOR, WEEP NOT FOR A WOMAN!"

weeping and penitent, returning to her attic upon the arm of the illustrious one, her husband.

Kwang Po scowled at the merriment of Wong Gee, and shook his head with anger. Then he stammered on with the finale of his narrative.

"To the Blue-coat-man I declared that the beautiful eyes were the eyes of my wife, and she was running away from my home with Wee Get, the stranger from the west. She turned like the wind and denied me, and to the Blue-coat-man she proclaimed loudly:

"'I know not this man. I know my husband, Wee Get.'"

The face of Wong Gee grew very sober and very earnest, as his friend confided this to him, and what was to come he awaited impatiently. He asked Kwang Po:

"The Blue-coat-man he told you to take home with you, your wife?"

Wong Gee saw in a moment that he had asked the wrong thing, for Kwang Po set his thin lips firmly, and shook his head from side to side. Then he explained with many gestures what the Blue-coat-man had said; how he had told him to go about his business, and poor Kwang, fearful of the wrath of the Blue-coat-man, had obeyed the mandate of the official meekly and with haste.

Wong Gee, with a face of sympathy, listened very courteously as Kwang Po concluded:

"Thus, most illustrious neighbor," he said, "the Ray of the Starlight shines no more upon my heart. I am alone and unhappy to the depths of me, and Ah Hing Cheng, of the beautiful eyes and the cheeks of the roses, is eating her rice cake, far away from my loneliness, under the love looks of Wee Get, and I am desolate."

Kwang Po buried his face in the tangle of his long fingers, and he wept. Wong Gee soothed him with a crooning voice, and then, with a smile of the cynic, told him a story.

"Illustrious neighbor!" he said. "Weep not your eyes for women. Once of the years six, I bought for me a wife with four hundred dollars. She died of the coughing. Once of the years four, I bought for my home another wife for two hundred dollars. She with Ah Chung See ran away from me. Once of the years two, I bought for one hundred dollars a third wife. She . . . So! So! my illustrious neighbor, weep not for a woman. They are like the fishes in the Great Sea. You lose one, or two, or three; it is well, for another you can catch very quickly."

Wong Gee rose in his majesty and rolled out of the narrow attic door.

"Go slowly," cried Kwang Po, sadly, as a farewell to his neighbor. Bravely enough he again tried to get away from himself, and to forget the Ray of the Starlight, the pretty Ah Hing Cheng of the beautiful eyes. There was a sobbing in his throat, his black eyes glistened, and fresh tears fell upon his yellow cheeks.

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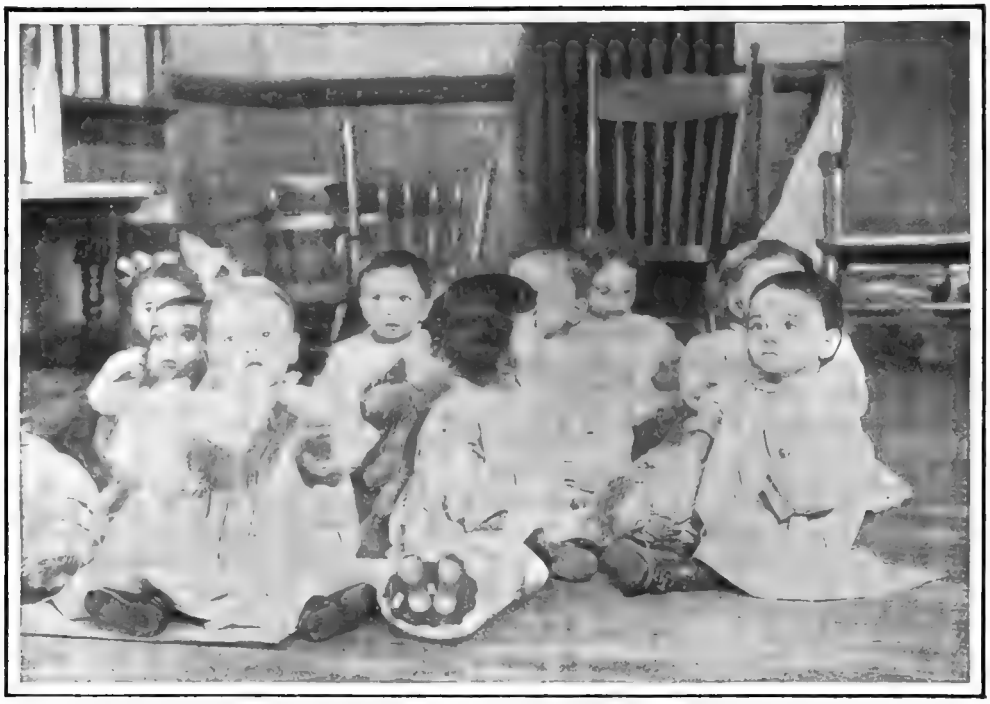

THE BABIES ARE GIVEN A BATH AND PUT INTO FRESH CLOTHES.

## DAY NURSERIES.

By B. M. G. Van Vorst.

It was in Paris that the day nursery had its origin. There first the rich people and priests began to inquire into the destiny of poor infants. The Abbé Ansault in more than one stirring sermon begged the people to consider what must become of the workingman's child, whose mother and father are both obliged to abandon it during the day while in search of the daily bread. Philanthropists became interested, and on the 14th of November, 1884, the first day nursery, or *crèche*, as it was called in France, was founded in the Rue de Chaillot. The object was to give to the children of poor working-people pure air, wholesome food and plenty of it, cleanliness, and unfailing care; and to give to the mother in this way freedom to work without anxiety, to help her with the care of the child without relieving her of this essential duty. The first *crèches* met with much opposition, but before long they overcame popular prejudice, and were patronized as now in every part of Paris, and incorporated into the city government.

The day nurseries in New York, which are typical of those in other cities of the States, are all supported by voluntary contributions. There are over fifty of them, and they are of every denomination and nationality. They have been founded one by one as need presented, generally in the poorest parts of the city, with the idea of helping penniless mothers to become bread winners, and always with the fundamental conviction that the poorest home is better than the best institution.

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THE PLAYROOM IS DIVIDED INTO SECTIONS FOR CHILDREN OF DIFFERENT AGES.

Like every metropolis, New York is less one big city than an aggregation of small towns. In Paris and London the nature of these small towns or quarters is determined by the industry pursued in them, but in New York the large foreign population, which is dispersed throughout the city for work, in settling divides into its separate nationalities, each giving to the district it chooses the appearance and character of its motherland, being, in all but its written laws, French, German, Hebrew, Chinese, or Italian, as the case may be; and the day nurseries take their nationality from that of the children who chiefly patronize them. At the day nursery in Suffolk Street, which is in the heart of the Jewish quarter, for example, there is not one Christian child. The signs over shop-doors are all in Hebrew; the women go about the streets without hats, their glossy black hair uncovered, and a bright-colored scarf knotted about the neck; under the corner houses there are open-air booths whose owners deal in Hebrew pamphlets bound with bright-colored paper, and in the Hebrew journals published daily in the quarter. Hung in the butcher's shop-window, which is always an indication of local income and character, there are cuts of animal substance unknown to the up-town butcher. Many of the shops have painted emblems over the door. Even in the winter the people are much in the street, and except for the rows of tenements which line it, the place is foreign in appearance.

The Suffolk Street day nursery occupies a small wooden building, and is patronized daily by fifty or sixty Jewish children varying from ten days old to seven years. There is a Jewish matron who supervises the work under the direction of a board of managers; there is a trained nurse for the youngest children, and two kindergartners for the older ones. The nursery is visited daily by a young Hebrew doctor, who treats all mild indispositions, and recom-

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mends serious cases for care outside of the nursery, where they may not remain when ill. It is open from seven in the morning until seven at night. Once in its history an infant was placed on the kitchen table at half-past six, before the matron was up and when only the cook was about. No word of any kind was left with the child, and no one ever returned to claim it, so after two days it was sent to join its forlorn companions in misery at the Foundling Asylum on Blackwell's Island.

Just beyond the Hebraic pale, in Essex Street, is the Episcopal Pro-Cathedral Day Nursery, under the supervision of Bishop Potter and a board of lady managers. The matron is an extremely capable trained nurse and she has an able assistant. Having but an average of eighteen children a day under their care, owing to the limited space allowed them, they can devote themselves in such a way to each as to make all clean, obedient, and cheerful. The babies are brought in the morning by their mothers on their way to work; they are given a bath and put into fresh clothes belonging to the nursery, while their own garments are aired and fumigated during the day; each child has a clean white crib, and is fed and cared for carefully. At about one o'clock, eight or ten children who have outgrown the nursery and passed on to the public school, return during the midday recess for an ample meal of soup and bread, and a quiet nap in a neat white iron bed, where they climb after removing their boots and their blouses, and placing them in an orderly fashion at the side of the crib. The pleasant, tidy room, its well-mannered matron, and the charm of good management have a telling influence.

"This baby was brought in covered with dirt, and not appearing like a human being," the matron related, "and now look at it." I did so, and saw a pale baby, clean and fresh, but listless, as though fatigued and glad to rest. Its mother, deserted by an incapable, irresponsible husband, had gone into a belt factory which paid her $2.75 a week for ten hours' work a day. She and the baby lived in a room whose only light and air came through a small skylight, rendered useless by winter snows and summer rains. For this room the mother paid $1.00 a week, and it is difficult to imagine what she would have done without the hospitality of the nursery. Because of it, she worked with a light heart, she worked well, she stood a chance of promotion.

In the Fourth and Seventh wards, which include Cherry Street, Catherine Slip, Water Street, some of the East Side river

EACH BABY HAS A CLEAN WHITE CRIB.

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A FREE LUNCH AND SUPPER FOR EACH CHILD.

front—covering in all an area of seventy acres—there is a population of 70,800 souls. There are one or two areas as crowded as this in London; in some parts of India there are as many as 866 souls to an acre, but in no part of the world is there such crowding for so great an area as here in the Fourth and Seventh wards of New York City. If the people were ordered out of the houses there would not be room enough for them all to stand in the streets.

There was formerly a day nursery supported by the Salvation Army in Cherry Street, but this has been abandoned, doubtless for the lack of funds, and the only one now in this quarter is at the Catherine Slip Mission. Between forty and fifty children are cared for daily at this nursery, and as many more are turned away weekly, for though the Mission occupies an entire house, it cannot meet the demands of a neighborhood so crowded. About one-half of the children's mothers are widows, members of the great army of scrubwomen whose lack of training for some craft forbids them from any more profitable occupation than cleaning the floors and windows of offices and stores. Some of them have been abandoned by their husbands, but others have good husbands who, with the best will in the world, cannot meet the demands of their large and hungry families. In such cases as these the mother has proved that the home is cleaner and healthier, and the family more prosperous in every way, when the day nursery is patronized. Instead of endeavoring to make parlor, kitchen, and nursery out of one room, nurse, cook, and maid of herself, and all more or less unsuccessfully, she places her babies in competent, skilful hands, devotes herself with a mind at ease to work she can do well, and, thus enabled to become a bread winner, she makes not infrequently $4.00 or $5.00 a week, which, added as supplement to the father's wages, enables them

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to have a cheerful, pleasant home. It is for this that the nursery is intended.

Certain regulations are common to the nurseries of all denominations and nationalities. They all receive children from ten days to seven years old; they are all open from seven in the morning until seven in the evening, except on Sundays and holidays, when the bread-winning mother is free and can look after her children at home. They all exact a medical examination of each child before it is received into the nursery; they all make a nominal charge of five cents a day to parents who can afford to pay this much; they all give a lunch and supper free to each child daily, and most of them make donations of clothes to children and mothers.

In actual management the nurseries differ widely, however, depending for this upon the individuality of the matrons and the board of managers. The day nursery in West Forty-fourth Street is entirely patronized by German Protestants, for example, and no attempt is made here to do more than simply keep the children out of danger. At the large nursery and free school, 69 South Washington Square, in connection with the Church of St. Vincent de Paul, which is in the heart of the poor French quarter, over one hundred poor Catholic children are in attendance daily.

The Presentation Day Nursery in East Thirty-third Street is entirely managed by a benevolent American lady, who goes daily to the large hotels and restaurants with a basket under her arm, to beg for the children's dinners.

When I had thus seen innumerable day nurseries, innumerable babies in pink wrappers, asleep in white beds, countless well-behaved children in blue aprons playing intelligent kindergarten games and learning to be useful in a variety of ways, I began to feel that this was perhaps the natural way for children to be, orderly, clean, and obedient. "How is this?" I said to the matron of the Catherine Slip Mission. "Perhaps you would like to see one of the homes where these orderly children come from," she answered, and led the way straight to a tenement in Water Street. We climbed five flights of dark, uneven wooden stairs. On the first landing we met a bow-legged child of three making his way down to the street. Both stockings hung down over his shoe-tops, his hands and face were dirty, and his apron was both dirty and torn. He clutched the bannister and stumbled past us down to play on the mud heap in the gutter.

"That's one that we have no room for at the nursery," said the matron.

She rapped on a rattling wooden door with two broken panes of glass near the top of it. There was a scampering of loose-shod feet, and the door opened. A father and four young children, the mother in bed with a baby nine days old, greeted us. Two older children were at work, and five of them had died, making in all fourteen, and the mother was thirty-four years old.

There was a stove and a table and a bed in the room where they all lived, and under the table there was a bed, and under the bed there was another bed. They were about to have dinner when we went in—two small slices of corned beef, a few boiled potatoes, and a cup of strong green tea. They welcomed the matron heartily. "See what a fine boy he is," said the mother, holding the wizened baby face up to the light. "This is my fourteenth. Some chucks 'em out in the ash-barrel, but I don't see how they kin do it. They can't have no heart. Why," she said, lifting the baby's shrivelled hands, "this little one is just as important to God as you and I." The children swung back and forth on their father's arm, staring, while he made apologies for the dirt and untidiness. "When the mother's sick we don't get much done," he said. The matron laid a parcel of warm clothes on the bed for the baby, and with many congratulations and admonitions went out, closing the door behind her.

"That is where the pink-wrappered babies come from," she said. "Don't you think the day nursery does a great, far-reaching work, of incalculable benefit to the laboring classes?"

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## NEGRO SERENADE.

De moon am shinin' bright on de melons in de patch,
But I don't care! Let 'em stay!
I turn my eyes away, for fear dey're goin' to stray,
For I'm gwine to serenade Belinda May!
Oh, Belinda! Ope dat winder!
No melon am so plump an' sweet as you.
I'll lub you all my life, so come an' be my wife,
An' all de day an' night I'll lub you true!

De chickens am asleep on de roost as I pass,
But I don't care! Let 'em stay!
I turn my eyes away, for fear dey're goin' to stray,
For I'm off to serenade Belinda May.
Oh, Belinda! Ope dat winder!
No chicken am so tender, lub, as you.
Come home to roost wid me, my little wife to be,
An' all de day an' night I'll lub you true.

De darkies down below hab all gone to de ball;
But I don't care! Get away!
One darkey won't be dere who can far outstep 'em all,
For I'm off to serenade Belinda May.
Oh, Belinda! Ope dat winder!
We'll dance by de shinin' ob de moon.
Oh, come an' be my wife, a partner for my life,
An' we'll dance while de banjo am in tune.

H. J. Nicholls.

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By Baroness E. Orczy.

I.

Madame Olga Borgensky would never, I am sure, of her own accord, have resumed her duties as political agent to the Russian Government.

When, two years ago, she had married Eugen Borgensky, a Pole, she had made both to herself and to him a solemn promise to renounce once for all a *métier* which, after all, most honest-minded persons would undoubtedly call that of a spy. And when, on the occasion of His Imperial Majesty the Tsar's visit to Vienna, Count Gulohoff approached her on the subject of her returning to the service of her country, she gave him a most emphatic refusal. I have it on the surest authority that this refusal annoyed and disappointed Count Gulohoff very considerably. He was at the time head of the third section of the Russian police, and had been specially ordered to watch over his Imperial master during the latter's stay in Vienna, and there was in his mind a suspicion, almost amounting to a certainty, that some plot was being brewed by the young Poles—chiefly wealthy and of noble parentage—who lived in Vienna, and had already given the home government one or two unpleasant nuts to crack.

Madame Olga Borgensky was just the person to help him to discover the headquarters of these young fire-eaters—she went everywhere, knew everybody—and if Count Gulohoff could have succeeded in dispatching one or two of them to cool in Siberia, he certainly would have been happier. But Madame Borgensky was obdurate—at any rate, at first.

During the early part of the evening at Princess Leminoff's ball, the indefatigable and diplomatic Count Gulohoff had made many an attack on her firmness of purpose, but she had an army of excuses and reasons at her command, and yet one little incident caused her suddenly to change her resolution.

It was after supper, during the czimbalom solo so exquisitely played by Derék Miksa, the czigány. Madame Borgensky was standing close to the band with her partner, young Prince Leminoff, and round her she noticed most of the young Poles that were such a thorn in the flesh to the Russian Government. She found herself wondering, while listening to Prince Lemi-

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MADAME BORGENSKY SANK BACK INTO AN ARMCHAIR.

noff's softly whispered nothings, whether it was mere coincidence that they each wore a red carnation in their buttonhole. The next moment she distinctly caught sight of a scrap of blue paper being slipped from the hand of Count Zamoisky into that of Dimitri Golowine, and then on to young Natcheff. I suppose it must have been that slip of paper that did the mischief, for one may as well expect a spaniel not to take to the water after a wild duck than ask Madame Olga Borgensky not to follow up a political intrigue when she had by chance caught one thread.

In an instant the old instinct was aroused. Forgotten were her promises to her husband, the dangers she so often had to pass, the odiousness attached to her former calling. She saw but one thing; that was the slip of blue paper which, under cover of the pathetic Magyar love-songs, was being passed from hand to hand, and the contents of which she felt bound to know, in the interests of Russia, of the Tsar, whose life perhaps was being endangered by the plans of these fanatical plotters.

"Prince Leminoff, I feel hot and faint; please take me into the next room at once," she sighed, half closing her eyes, and tottering as if about to fall.

The young man started and turned a little pale. His fingers closed tightly over a scrap of blue paper that had just been thrust into his hand; but his tremor was only momentary. The next instant he was leading the now almost fainting lady into the smoking-room, where a bright blaze was burning in the hearth. Madame Borgensky sank back into an armchair close to the fire.

"Now light a cigarette, Prince," she said, when she had recovered a little; "the smell of the smoke would do me good. Really that music had got on my nerves." And she pushed the gold *étui* of cigarettes, that stood invitingly near, towards her young partner, who, without a moment's hesitation, and with the greatest sang-froid, folded the compromising paper he was still clutching into a long narrow spill, and after holding it to the fire one moment, was proceeding to light a cigarette with it, when:

"Allow me, Prince; thank you," said Madame Borgensky, gently taking it from between his fingers, and, with an apologetic smile, she lighted her own cigarette. To blow out the flame, throw the paper on the floor, and place her foot on it was the work of but a second, and the young Pole had barely realized what had actually happened when a cheery voice spoke to him from the door.

"Prince Leminoff, the last quadrille is about to commence. Everybody is waiting for you. Are you dancing it with Madame Borgensky?" And the Abbé Rouget, smiling and rubbing his little white hands, trotted briskly into the room.

"Shall we go, Madame?" said the

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young Prince after a slight hesitation, and offering the lady his arm.

"Please let me stay here a little while longer and finish my cigarette in peace. I really do not feel up to dancing just at this moment. I will give you an extra valse later on if you like."

"If Madame Borgensky will grant me the much sought for privilege," said the Abbé, "I should deem myself very lucky to be allowed to keep her company for half-an-hour."

"At any other time, Monsieur l'Abbé, I should only be too happy," said Madame Borgensky, "but just now I really would prefer to be alone. Five minutes' quiet will set me up for the rest of the evening."

"Your wishes are my commands, Madame; I will read my breviary till the sound of your voice calls me to your side."

And taking Prince Leminoff's arm, the Abbé led him towards the door. As soon as they were out of earshot:

"There is something amiss," said the Abbé. "What is it?"

"Only this," replied the young Pole. "A scrap of blue paper, containing our final arrangements for to-morrow night, is at the present moment under Madame Borgensky's foot. It is partly burnt. Can your Reverence find out how much of it has remained, and if there is any danger in proceeding to-morrow?"

"Easily, my son, quite easily; and if there is, I will find means to warn you—but if all is safe, I will wear the red carnation, as usual, at Madame Borgensky's ball. Say nothing to the others till then."

And the Abbé turned on his heel, and taking a breviary out of his pocket, sat down in a chair opposite Madame Borgensky, and proceeded to read the Latin text in a half-audible voice, apparently not taking the slightest notice of the lady. Olga Borgensky, however, had not yet succeeded in picking up the paper from under her foot; she was burning with impatience to know the contents, and her excitement became such that she could only with the greatest difficulty conceal it from the Abbé.

At length she could endure the suspense no longer, and she was just stooping forward to pick up the paper at all hazards, when the voice of Count Gulohoff startled her. He drew a stool close to her, and said in a low whisper:

"*Eh bien*, Madame? You see, I come back, an unvanquished enemy, to renew the attack."

"I may be able to serve Russia and help you, Monsieur," Madame Borgensky said excitedly from behind her fan. "Come to my ball to-morrow, and if I find no means of speaking to you privately before then, I will slip a letter for you inside the pink Sèvres vase that, as you know, stands in the centre of the mantelpiece in the ballroom. And now take the Abbé away if you can." Then she said in a louder tone of voice: "What a gay and animated dance this has been, even M. l'Abbé there has been reading his prayers with holy joy and vigorous piety, but I confess I am getting very tired, and would be so grateful if somebody will find out for me if Eugen Borgensky is in the ballroom and ready to take me home."

"I will go and find him at once," said Count Gulohoff rising, "and will your Reverence," he added, turning to the Abbé, "give me my revenge at piquet?"

"Oh! ah! yes! Did your Excellency speak to me?" said his Reverence, as if waking from a dream. "Forgive me, I was enjoying half-an-hour's communion with the saints, which is most refreshing during the turmoil of a mundane gathering. What did your Excellency say?"

"I merely asked if you would care now to give me my revenge at piquet; if so, we had better go at once and secure a table before there is a rush for the cardroom."

"With all the pleasure in life," said the cheerful little Abbé, and putting his breviary into his pocket, he followed Count Gulohoff into the ballroom.

## II.

At last! She was alone! Olga Borgensky drew from under her foot the scrap

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of paper, and feverishly unfolded and smoothed it. It had been more than half burnt, but the contents, such as they were, fully compensated her for all the difficulties she had encountered.

This is what she read:

..... ..... .... ensky's ball
..... his carriage
..... thrown without much
.... lots as to who
..alom solo, in the
...who are willing
...red carnation in
.....

At her ball then, in her home, which had been so hospitably opened to these young plotters, their infamous schemes were to be consummated.

No doubt existed in her mind. His Majesty the Tsar, as was well known, meant to honor her by appearing at her ball for an hour or so on the following evening.

When he re-entered "his carriage," a bomb would be "thrown without much" risk of detection, as the crowd would be sure to be very dense. In the meanwhile the conspirators meant to draw "lots as to who" should be the actual assassin, and this they meant to do during the "czimbalom solo," probably in the card or billiard-room, and those that were willing to perpetrate this dastardly deed, and thus to sacrifice themselves as well as their family, were to wear a "red carnation," which was evidently the badge of the fraternity.

The terrible part of the whole thing in Madame Borgensky's mind was that, as the infamous plot was to be carried through in her house, she, and especially her husband, were certain to be suspected of some sort of connivance, and might thereby lose their liberty, probably their lives.

"HOW PALE AND AGITATED YOU LOOK," SAID A VOICE CLOSE TO HER ELBOW.

Ah! how she hated these plotters now, with a bitter, deadly hatred, the hatred of the Russian against the Pole, the hatred born of fear! How thankful she was that Count Gulohoff had induced her to spy on them; she did not regret her action now, as at one moment she feared she would do.

"Why, my darling, how pale and agitated you look," said a loving voice, close to her elbow. "Count Gulohoff told me you had not been well, and I have ordered the carriage to take you home."

And Eugen Borgensky bent anxiously over his young wife, and scanned her wan-looking features and wild eyes.

"It is nothing, dear," she said; "a little too much excitement, I think. I will make my adieux to Princess Leminoff, and we will go home at once." When she joined him again a moment later, all her wonted composure had returned.

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## III.

The Borgensky's ball was to be one of the most brilliant functions of the season. Everybody had said so, for weeks past, ever since it had become generally known that his Imperial Majesty, the Tsar, meant to honor Olga Borgensky by being her guest for that evening. Everything the fair Russian did, she did well. The giving of entertainments she had studied and cultivated till she had brought it to the level of high art. She had been the Queen of Vienna society for some years now, ever since she had married Eugen Borgensky, the friend and confidant of his Eminence the Cardinal Primate of Hungary. All the doors of the most exclusive Vienna cliques had been widely thrown open for her, and *tout le monde* flocked to her soirées.

It was ten o'clock, and Madame Borgensky, exquisitely dressed and covered with diamonds, was ready to receive her guests, with the calm and grace that characterizes the "grande dame." A very careful observer, such as her husband probably, might, perhaps, notice that her hand shook slightly as she held it out to each fresh arrival, that her cheeks were unusually pale, and her lips quivered from time to time; also, that whenever she looked away from the door that gave access to her guests, it was to glance at the fine Italian marble mantelpiece at the furthest end of the ballroom, where a magnificent pale pink Sèvres vase of beautiful proportions and graceful lines stood in the centre among a multitude of other equally beautiful knick-knacks and silver trinkets of all kinds.

"Ah, M. l'Abbé, I am charmed to see you," said Madame Borgensky, as the Abbé Rouget, his breviary between his fingers, his fat face beaming with promises of enjoyment, arrived at the top of the stairs and greeted his hostess. "You will find Eugen in the cardroom, I think. I really have not seen him since I took up my post at the top of the stairs, but he was asking me whether we should have the pleasure of seeing you to-night."

"Ah, Madame! Eugen Borgensky is too kind. The archbishop, as you know, has allowed me innocent recreation from time to time—with the exception of dancing," he added with a half-regretful little sigh.

"Besides which, M. l'Abbé, you know you can always have half-an-hour's peace in the smoking-room during which to tell your beads," said Madame Borgensky a little sarcastically, remembering in what an agonizing plight the holy man had placed her the evening before by his persistent devotions.

"I find when I have the pleasure of coming to this house, Madame, that I can always have the billiard-room to myself for a quiet meditation some time during the evening. It is necessary for the soul not to entirely lose sight of spiritual things in the brilliancy and gaiety of a mundane function. But I must not monopolize your kind attention so long," said the jovial Abbé, as he bowed to his hostess and began working his way through the now rapidly filling ballrooms.

Madame Borgensky looked anxiously after him, a puzzled expression on her face. Was it mere coincidence that the Abbé had in the buttonhole of his *soutane* a red carnation, exactly similar to the one worn by Prince Leminoff and three or four other young men she had noticed in the course of the evening, and the meaning of which was now clear to her? Surely he would not risk such a pleasant, assured position as he possessed for the sake of the destinies of a country that was not even his own.

Madame Borgensky caught herself now scanning the young men's buttonholes very curiously; there were at most only about ten or twelve of them that wore the red flower; the Abbé was certainly one, Prince Leminoff—foolish youth!—another, and . . . Ah! no! no! it is impossible, her eyes are deceiving her, her overwrought imagination is playing her own sight a cruel trick. She closed her eyes once or twice to chase away the fearful vision, but it would not go. It was true then? There, standing with his back

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to the pink Sèvres vase, a red carnation in his buttonhole, was Eugen Borgensky, her husband!

Ah! how could she have guessed? How could she know what a terrible deed she had done? She, Olga Borgensky, a happy, loving, and loved wife, had actually spied upon and betrayed her own husband into the hands of a police that knows of no pardon. But, no; all was not lost yet, thank God! she had so far told Count Gulohoff nothing. She had devised a means of communicating with him, that she had felt would be a safe one, in case she found no chance of speaking to him privately, and now it would prove her salvation.

Feverishly she turned to go into the ballroom, heedless if any one should notice her. What matter what people thought of her actions, as long as the terrible catastrophe is averted in time——

"His Imperial Majesty, the Tsar," thundered the voice of the usher. All conversations ceased, and all necks were stretched forward to catch a glimpse of Alexander III., as he ascended the stairs, chatting pleasantly to Count Gulohoff.

Madame Borgensky, forced to pause, felt as if the whole room, the Tsar, her guests, were all changed into weird spectres that seemed to dance a wild fantastic dance around her; one moment she thought her senses would leave her . . . the next instant she had bowed after the approved Court fashion, and was thanking Alexander III. for the honor he was doing her, while his Majesty, with his usual affability, was conversing pleasantly with her and Eugen Borgensky. She had lost sight of Count Gulohoff, who, exchanging handshakes, nods, and smiles, worked his way through the ballroom towards the mantelpiece, where the gay little Abbé was being monopolized by a group of pious *mondaines*, and seemed to be enjoying himself thoroughly.

"Ah, your Excellency is just in time," said his Reverence, "to settle a most knotty point. We are having, mesdames and I, a very animated discussion on pottery and china, namely, the superiority (which I call very exaggerated) of antique over modern manufacture, and I was contending that many a connoisseur is not guided, when buying a piece of china, by the actual quality of the ware, but merely by the mark upon it."

"Ah! M. l'Abbé is terribly sceptical of feminine knowledge," said the Countess Zichy, "but I am sure that in this instance he wrongs us grievously. I, myself (and I have no pretensions at being much of a connoisseur), need never look at the mark of a piece of china; I can always locate its origin, sometimes even its date. Does your Excellency doubt me?" she added, turning to Count Gulohoff, who had assumed a somewhat incredulous attitude.

"I would not do so for worlds," said the courtly Russian, "but I confess that I would feel very interested to test your knowledge, Comtesse; this room, for ininstance, is full of bibelots. Olga Borgensky has some rare and beautiful pieces; shall we experiment now, to commence with, on this exquisite pink vase?" And Count Gulohoff, inwardly thankful at the turn the conversation had taken, stretched out his hand towards the vase, from the inside of which he had already noticed protruding the corner of an envelope.

"Allow me, your Excellency," said the Abbé, "to lift the vase up for you."

"No! no! I have it quite safely," said Count Gulohoff, who, hearing the faint, crisp rustle of paper inside the vase, was tilting it towards him, in the hope that he could obtain the letter unperceived.

At that moment the Abbé, who was short and somewhat round, apparently in trying to reach the vase must have lost his footing, for he fell forward, and, in steadying himself, jerked the arm of Count Gulohoff so violently that the latter lost the grip he had on the vase, which fell crashing to the floor.

There was general consternation among the little group of male and female connoisseurs who had gathered round to see the end of the debate: the poor little Abbé especially seemed terribly distressed, trying to pick up the pieces, and wondering whether the valuable vase could by any

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possibility be repaired. Count Gulohoff was for one moment terribly disconcerted, when, in the crash, he lost sight of the letter; his mind was, however, soon set at rest, for he quickly noticed it lying on the floor, close to the priest's *soutane*, and he was able to pick it up unperceived.

## IV.

Madame Borgensky, forced in her capacity as hostess to be constantly attentive to His Imperial Majesty, doing the necessary presentations, and having to appear as gay and entertaining as possible, had not, from the end of the room where she was, noticed the little scene that was being enacted close to the mantelpiece. Had Count Gulohoff possessed himself of the letter, she wondered?—the letter that denounced her husband, as well as his friends. She endured most excruciating tortures of mind, all the more unendurable as she was, for the moment, at least, perfectly powerless to do anything. She was gaily chatting the while, gradually leading Alexander III. towards the further end of the ballroom in the hope that she might yet ward off this fearful, monstrous thing.

Ah! it was too late. She had caught sight of Count Gulohoff coming towards her, and she felt, more than she actually saw, that the fatal letter was in his hand.

"Will your Majesty, and also my fair hostess, deign to allow me to take my leave?" said the Count, bowing before the Tsar; while he threw a quick glance of intelligence at Madame Borgensky, who had now become deathly pale; "serious duties call me away."

"Yes, dear Count!" said his Majesty laughing. "I bet you he has discovered some conspiracy against my life, and is going to save me. I assure you, Madame, last year he discovered 365 plots, each one of which would inevitably have ended my days, were it not for the devotion and fidelity of Count Gulohoff."

"The devotion and fidelity of all your Majesty's right-minded subjects," said Count Gulohoff. "Madame Borgensky, I feel sure, would do what I have done, and more, were she but given the opportunity, which, after all, may arise any day."

"Indeed, your Majesty, and so would my husband, than whom your Majesty has no more faithful subject," said Madame Borgensky, vainly trying to master her emotion.

"I thank you, Madame," said the Tsar, with the charming cordiality so peculiar to him, "and I can assure you that in coming here I quite forget that I am the guest of a Pole. Well, *au revoir*, *cher Comte*. I shall leave soon after one o'clock, and I hope Madame Borgensky will allow me, for the moment, to monopolize her society and let me escort her to the supper-room."

And offering his fair hostess his arm, Alexander Nicolaïevitch led her across the room and down the stairs, followed by the respectful salutes of all, and the glances of admiration levelled at his beautiful partner, who, with eyes open wide with agonized fear, and cheeks blanched with terror, was making superhuman efforts to appear calm and self-possessed.

## V.

The supper was very gay. Alexander III., always a valiant trencherman, and notoriously as fond of a good glass of Tokay as of the society of a pretty woman, was graciousness itself, and deigned to enjoy himself vastly. As for the "czigány" who were playing during supper, he declared he had never heard more entrancing music, and when, after the feast, the traditional czimbalom solo was to be played, his Majesty declared his desire to listen to it, and afterwards watch the "czárdás" before he left.

It was while the gipsies, with all that peculiarly pathetic weirdness with which they play the Magyar folksongs, played that exquisite tune so dear to all Hungarian ears, "There is but one beautiful girl in all the world," that Madame Borgensky first realized that *something* after all

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might be done, if God would but help her, and allow her to think. Ah! how she prayed at that moment; inspiration such as she needed could but come from above.

She looked round at her guests; her husband, the Abbé Rouget, Prince Leminoff, and the dozen or so that wore the red carnation were absent. She knew where they were, and—oh! how terrible—knew what at that moment they were doing. Drawing lots as to who should do the assassin's deed. Oh! if it should be her husband. "Not that! not that, oh my God, direct his hand! he does not know! he does not understand!" she pleaded. "The Tsar is his guest! no! no! even *they* would think that deed too horrible."

"Ah! that music was indeed divine," said Alexander Nicolaïevitch, half dreaming, as the last chords of the czimbalom died away, "and it will long haunt my memory after I leave Vienna to-morrow. And now, my dear Madame Borgensky, I must reluctantly bid you farewell, thanking you for your kind hospitality. Believe me," his Majesty added, looking admiringly at his beautiful hostess, "that the remembrance of to-night will long dwell in my heart." And the tall figure of Alexander III. bent low to kiss gallantly the tips of Olga Borgensky's fingers that lay cold as ice in his hand.

"Ah! here comes our kind host," said his Majesty, as Eugen Borgensky, very pale, approached him. "My dear Borgensky, may I express a hope that next winter will see you and Madame at St. Petersburg? I can assure you she has left many friends and admirers there."

"Your Majesty's wishes are commands," said Eugen Borgensky, bowing coldly.

The Tsar shot an amused glance at him. "Jealous?" he asked Madame Borgensky *sotto voce*.

"No doubt," she answered, trying to smile.

And Alexander III., followed by his host, and two or three gentlemen of his suite, turned his steps towards the stairway, still having on his arm Olga Borgensky, from whom he seemed loath to part, and bowing cordially to those whom he recognized among the guests, while the gipsy band struck up the Russian national hymn: "God Save the Tsar."

The poor unfortunate woman walked by his side as if in a dream; her movements were those of an automaton. Now, if in the next five minutes something did not happen—something stupendous, immense—the terrible deed would be accomplished, Heaven only knew by whose hands.

Once in the hall, while two or three of the gentlemen in attendance busied themselves round their Imperial master, helping him with his furs and gloves, and the brilliant equipage drew up under the portico, Madame Borgensky shot a quick glance into the street outside. The crowd was very dense; she recognized no one. Then, as if moved by sudden inspiration, when Alexander III. began at last an evidently reluctant leave taking, she walked up to one of the large banks of palms and cut flowers that had been erected on each side of the hall, and gathering a huge armfull, she turned to the Tsar and said:

"These are for remembrance; let me place them in your carriage in memory of to-night." And she threw him one of those glances she alone had the secret of, which quite finished turning an Imperial head and subjugating an Imperial heart. Carrying her sweet-smelling burden, burying her head among the blossoms, she walked through the doorway to the Imperial carriage, closely followed by the Tsar. With her own hands she opened the carriage door, standing there, beautiful and defiant, daring them, the unknown assassins, to throw the bomb that would annihilate her, their hostess, the wife of their comrade, as well as him.

Then, when the Tsar had at last entered the carriage, she lingered on the steps, arranging the flowers, still chatting gaily, and when she herself had closed the carriage door, she stood, her hand in that of Alexander III. She meant to stand there till the coachman, whipping up the horses, had borne his Imperial master out of any danger. At last the lackeys were mounted,

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the Tsar gave her a last military salute, the coachman gathered the reins . . . At that moment Olga Borgensky felt two vigorous arms encircling her waist, and she was thrown more than carried violently to one side, while a second later a terrific crash rent the still night air.

There was a tremendous rush and tumult; something appeared to be smouldering some yards away in the middle of the road; while the Emperor's carriage, with its small escort of mounted cossacks disappeared, in a cloud of dust, along the brilliant road.

"Come in, Olga, you will catch cold," said her husband's voice close to her, as soon as she had partially realized the situation.

A SECOND LATER A TERRIFIC CRASH RENT THE AIR.

There seemed to be a great commotion both outside and in. She allowed Eugen Borgensky to lead her, past her astonished and frightened guests, into a small boudoir, where she saw the Abbé Rouget sitting in a huge armchair, with eyes raised heavenwards, softly murmuring: "*Mater Dei, ora pro nobis.*" He seemed sublimely unconscious of any disturbance, and rose with alacrity to offer the half-fainting lady his seat.

At a knowing wink from the little Abbé's sparkling eyes, Eugen Borgensky, gently kissing his wife on the half-closed lids, left the two alone together.

Olga Borgensky looked pleadingly at the Abbé; she was dying for an explanation, longing to know what had happened.

"Madame," at last said the jovial priest very earnestly, "your brave attitude tonight has averted a terrible catastrophe. You have no sympathies with our plots and plans, you do not understand them; but you well understood that, at any cost, any risk, your life with us would be sacred.

"One of us, the one who drew the fatal number, was stationed outside your gates, to rid Russia of her autocrat. On seeing you, his heart failed him, he threw the

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"DID THEY ARREST ANY ONE? WAS MY HUSBAND SEEN?"

bomb in the middle of the road, where it could not reach you, even if it hit the Tsar. Both of you, however, are safe."

"But Count Gulohoff," she said—"he knew, he and the police must have been there; did they arrest any one? Was my husband seen?"

"No, Madame, Count Gulohoff was not present. I succeeded, by substituting a letter of my own for the one you had placed for him in the pink Sèvres vase, in inducing him to go with his minions to the other end of Vienna to seek for conspirators who will not be there. To-morrow the Tsar and Count Gulohoff will have left Vienna. It is true our plans have utterly failed, but we are also quite safe, and not even suspected."

"And Eugen Borgensky, my husband, M. l'Abbé?"

"I pledge you my word, Madame, that whilst I can do anything to prevent it, and I can do a great deal, he shall never again wear the red carnation."

## FLEETING.

*Fleeting on, forever fleeting,*
*Like the spirit of the wind;*
*Still the years roll on, repeating*
*Echoes of the year behind—*
*Naught the mystic chain may sever,*
*Present now and future ever.*

*On, forever, onward speeding*
*Down the long-drawn vale of tears;*
*Still the fading past, receding,*
*Beckons to the future years—*
*Flitting onward, resting never,*
*Present now and future ever.*

CLARENCE HOPE.

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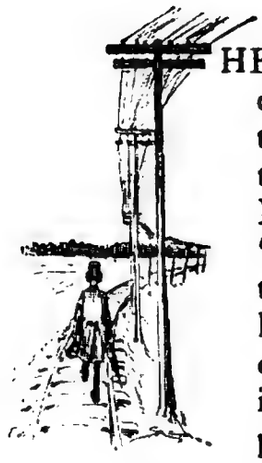
# THE ACTOR ON THE ROAD.

By a Manager.



THE actor on the road—a difficult subject, for no two are alike—if we are to take their statements. Each and every actor is "the" actor; each is the one actor who plays his part as "nobody else could play it"; each is ill-treated; each is deprived of the "centre" of the stage when he ought to have it; each is underpaid; each has been in a better position than his present one; each is continually complaining, except the "star."

Like the big men in all professions, no one actor can be picked out as being a typical "star." Any such sketch of an actor as I have given above must be understood as excluding the dozen "stars" that are prominent in this country, for they have attained their positions by a combination of shrewd business talents with art. Great success makes them overbearing sometimes; all of them have their faults, but they are not the faults particular to any one calling. On the whole, I would say, that the great actor, the "star," is a more interesting friend and companion than the great artist, the great author or even the great statesman. Of a particular "star" whom I have in view I can sincerely state that I never met a man whom an immense popularity and the continual glare of publicity had left so little unaffected. Never have I seen a man who so quickly inspired, on the slightest contact, love and reverence. If he has a fault, it is his modesty—strange thing! that this profession which so generally destroys this quality in others seems to have intensified it in him. If the actors of to-day were to pick out one of their number who would best represent their brains and heart, no man would be so worthy of their choice as he. But, for this article, he must be nameless.

In the same way I wish to exclude the leading lady, and, in fact, almost all of the women on the stage. No more mistaken notion prevails than that which concerns the American actress. The misdeeds of the chorus girl, who is not in any sense of the word an actress, and the tendency to refer to any woman who has golden hair as a member of the stage, have created a curious general impression which seems too "husky" to die. But this I say—that the American girls on the stage have all the dignity and the worthiness of respect of any of their sisters, and much more than some other professions that are unnecessarily lauded.

The actor on the road is the actor of every other time and occasion, plus the aggravation of all his faults and the burnishing of all his virtues by the vicissitudes of travel. His jealousies, his bitternesses, his intolerance, his fault-finding are brought out with fullest power, so also are his wit, his patience, his good-fellowship, and his professional abilities. He has enough to endure to excuse the former, and not enough to enjoy to explain the latter. So the balance is to his credit.

Word-pictures of the actor on the road must necessarily be either composites or of types. In the years of association which I have had—presumably for my sins—with "road companies" I have become familiar with the types, and intimate with the characteristics of the composite. In my sketches below, it must be understood that I speak of no individual, except when stated.

. . . . . .

The next "stand" was Topeka. The "call" gave 7.10 A.M. as leaving. In other words we would play in Topeka tomorrow night and would leave Wichita at 7.10. When Haswell read the "call" he swore freely and copiously, but the next moment he had forgotten it. Such is the actor's temperament. Once only did he refer to it again, and that was when he sat

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"THE CALL IS FOR 7.10 A.M."

down to supper with Faber, who had asked him if he knew how beastly early he had to get up. Then he used a cuss word again, but it was mild this time, for at night the actor is inclined to take a more patient view of things. His work is done, he has come away from a thousand or more people who have expressed their approval of him, that is—his work; and he and they are so closely bound up that any praise of the former must also be personal. Henry Irving once said, apropos of the short life of the actor's fame, that, in a way, it was an equalizing of things. A painter's work is praised and admired calmly and critically, so with a sculptor's and an author's. But when an actor does a great piece of work the people throw hats up in the air, shout, applaud, and show their appreciation in a number of other extravagant ways. His fame is greater than any other artist's—for a short, very short time.

You have probably seen a painter on Varnishing Day at the Academy. You know how joyous he is when half a dozen people in a nice, polite way have told him how much they admired his pictures. What would be his feelings if a thousand people congregated about his picture and shouted and applauded, and made him come from the Committee Room and bow and smile? if a lot of pretty girls were to look at him as if he were the last of the race, and if one or two, more senseless than the rest, were to write to tell him he was "sweet"? Your painter would stop painting and go crazy. I know mine would. But the actor doesn't go crazy. After he has done his little bowing act in front of the curtain, he swings across the stage to his dressing room, stopping to remark to Billy Faber, who isn't good-looking, nor a favorite, that "there's an intelligent lot in the front, isn't there?" To which Billy may assent and may not.

His costume off for the ordinary unpoetic attire of the day, he is off for supper—with some of the one thousand who applauded and shouted approval at him? Not a bit, but with two or three of the "boys," members of the company, or perhaps an outsider or two. All that remains of the audience that he faced and for whom he worked so hard is a memory.

Still he feels good. There is a nice, pleasant sensation inside that he is a pretty big man and, warmed by it and much needed food and drink, he talks easily, freely, even generously, is brilliant at times and always interesting. He has a fund of stories, a host of imitations; his keen sense of humor helps out the others' stories. And as it gets near morning he smokes his final cigar, has his final drink,

HIS LITTLE BOWING ACT.

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HIS DREAM.

says a pleasant good-night to everybody, and goes to bed and dreams—

He dreams that instead of being a leading juvenile at a salary of $125 a week, he is a star making $500, then $1,000, then $2,000, then $3,000, then so much that he has to hire people to count it for him. He dreams that instead of being of second or third importance in the company, he is everywhere regarded with fear and awe; no manager dare speak to him in the tone that Daniels did the other night. He dreams that instead of having to get up at daybreak every day for a week in order to get to the next one-night stand, he spends the entire season in his own theatre on Broadway, has fine notices and packed houses, lives in luxury—

Bang, bang, biff! "Six o'clock, get up!" comes from outside his door.

Then he realizes what vapory things dreams are, for he has had only two hours' sleep; he must be down to the depot at seven o'clock, ready for a five-hour ride to the next town.

He gets out of bed and says with a great deal of emphasis:

"Gee!" And in that "gee" are disgust, discontent, curses on luck, rebellion, etc.; but he is at the depot at seven o'clock.

Thus does the actor on the road begin the days, no two of which are alike, to an observer. When he gets to the depot he has a "groutch." * As a rule (this is in truth a curious engineering rule in the West) trains that are scheduled to leave at seven o'clock A.M. are an hour or two late. When he thinks that this hour or two which might have been comfortably spent in a nice warm bed must be passed in the waiting room, he begins to think how he can say pleasant things about the management.

* "Groutch," as a noun, is not in the dictionaries, but it has a prominent place in the actor's vocabulary. "To have a groutch" is the superlative degree of the adjective "surly."—*q.v.*

It may be wise to say a word at this point concerning the *argot* of the actor, which is the apotheosis of American slang. Slang it is, slang of the broadest and easiest, yet how magnificently forceful some of it is, and how quickly many of its phrases have passed into legitimate use!

Could anything be more eloquently expressive than the phrase "rubberneck," to characterize the offensively inquisitive and peering person? That phrase was the inspiration of some tortured "trouper." It is a phrase that will live on in polite language because of its sheer strength and merit.

Whatever the opinion of the purist on the propriety of clean and expressive slang, it is impossible to avoid its use in this sketch, if the writer would retain an important characteristic of the class he is endeavoring to depict. And so this little glossary of terms used may be of value:

*Knock*—v. To criticise adversely. (Synonymous with "to hammer.")

*Knocker*—n. One who "knocks." A discontented actor, who generally receives less than $40 a week.

*Bunch*—n. Several of a class; a coterie.

*Untie*—v. To say; to expound; to release to the appreciation of the audience. "To untie a bunch of gags" is to crack a series of jokes.

"GEE!"

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The popular idea is that a manager's business is to manage. This is a mistake. His business, the major part of it, is to explain why snow-storms delay trains, why accidents delay engineers, why sleeping cars are draughty, why dressing rooms in houses he has never been to before are bad, why the sun does not shine on rainy days, and why human nature is not perfect.

Ordinarily a theatrical company's opinion of the management is bad (except when it concerns the management of the previous season, which was always good). This opinion slumbers on with now and then an occasional rumbling. A long delay, due to a snow-blocked train or a smash-up, always brings about the eruption.

"Just to think——"

"Well, what can you expect?"

"Fool that I was——"

"Such a badly arranged route——"

"Treated like dogs——"

"Refused to advance me money——"

"Me too."

"And me."

"Took out $20 to pay for costumes——"

"A robbery. When I was with Booth——"

"Should never have signed the contract. Think of offering me $60 a week! I who have had my own company—who am, etc.—; have, etc.—; did, etc."

"A rank injustice——"

"Badly managed——"

"Now, I'm not conceited; nobody would say I am conceited, would they?" (Chorus of murmured "noes"). "No, I am not conceited, but, by Heaven! I want my rights. When I want the centre of the stage I want it. Yes, I want it. Think of it, when I am handing out that 'bunch' of love talk in the second act, which, even if I say so myself, I do as well as anybody could; when I am doing one of the bits that save the play from being a failure, that mean, measly, insignificant, chicken-livered viper unties a lot of gags and gets a laugh. Yes, a laugh. Why, if such a thing were to happen in B——"

The train-master opens the door and announces that the train will arrive in five minutes. Haswell pauses in the recital of his wrongs; anger and unforgiveness disappear from his face; he turns and says quietly to his listeners:

"Let's have a smoke."

And despite what seems a great interest in his sufferings, the change is readily assented to, and a laughing, joking crowd get on board the train.

Having seen the actor fairly started on the day, let us make a few general observations while he rides to the next town.

One hesitates to say which impresses a novice in "trouping" the most—the seeming omnipotence of the manager, or the social sets into which the travelling troupe divides itself. If perchance you should ever go into a theatrical manager's office, and he talks to you with his feet on the desk, a cigar in his mouth, and his hat on the side of his head, restrain any impulse to knock the fellow over—he cannot help it. The chances are that at one time he was a very decent sort of a chap with no idea that the universe weighed, atlas-like, on his shoulders. If, on the other hand, your slight acquaintance with actors who are not stars leads you to believe they are pompous and loud-mouthed, pity them instead of disdaining them, for it is in every one's nature to talk loud to some one, and the actor never can express himself adequately in the presence of his manager. There, at least, he is the gentlest thing that ever the sad world saw.

The social sets form and reform, but they remain practically the same. Tradition is partly responsible; previous condition of servitude, salary, and to what length one spends one's salary are other factors. The star, leading lady, and perhaps the first young man get into the first circle and they keep religiously to themselves, except the "first," who is genial and good-natured. The first old man, old woman, the ingenue, and the second young man are a second set. Then comes another group of four, then another group, and so on down to the property man and the stage carpenter.

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It is the privilege and the pleasure of each group or set to "knock" the group or set above. This "knocking" is one of the most delightful phases of trouping. The process is something like this:

A victim is selected—from an upper set—and his or her personal or histrionic merits are carefully analyzed away. When playing one-night stands we have, in going from one town to another, about three hours' railroad ride every day. This, therefore, allows of daily sessions, and if the "knockers" are industrious they can dispose of one person each day, so that in two or three weeks they will have reached the conclusion that, outside of their own "set," there is no person in the company fit to act or live.

Suppose yourself to be sitting back of set No. 2, it would sound something like this to you:

"Don't you think that Hallen is——"

"If they would only let me play that part——"

"Yes, you would be fine——"

"I think my little scene——"

"Pity it is spoiled by that fool——"

"Awfully wooden, don't you think?"

"With the exception of ourselves a very bad company, indeed."

"No stage management at all——"

"When we four get to New York—"

But by the time that "we four" get to New York "we four" are probably not on speaking terms.

The period on the train is one of mellowness. It approaches nearer to that "delightful hour" after midnight than to any other part of the day. Curious as this may be, it is so; and the only explanation that can be given is that the actor learns by experience how fatiguing railroad riding is, knows that it accentuates any mental sourness, and so unconsciously gets in the habit of pulling himself together and making of the train ride an hour of jocundity.

The actor's humor is of two kinds, the story-telling-reminiscent-imitation style and the repartee—which is generally incisive and occasionally brutal.

This may be taken as a type of a million passages; Haswell tells one of his funniest stories, Faber fails to laugh:

"Don't you think that a funny story, Bill?" asks Haswell.

"No, I don't find any fun in that."

"Well, I can only give you the story; I can't give you the brains."

"You can't very well give what you haven't got, can you?"

True, this is not the kind of humor that will appeal to the sensitive soul, but you will generally find among actors, as among other people, that it is the sensitive soul that is best at this sort of thing, though disliking it and only resorting to it when obliged to.

It is the "story-telling actor" that is most in evidence on these daily jaunts, and it is he who enlivens the tedium most.

Almost every good actor is, of course, a good story-teller. He is trained to dramatic effects, accustomed to crisp and pungent expression, and, above all, he is entirely without "timidity of audience." Moreover, he has a cultured memory.

This last he needs, for when one travels week in and week out with the same audience, it is necessary to have a wide repertoire of stories or to sit mum-chance. It is a matter of astonishment even to me, after long experience with past-masters among *raconteurs*, how they keep up their pace for hour after hour, day after day,

"TRAINS SCHEDULED FOR SEVEN O'CLOCK ARE ALWAYS AN HOUR OR TWO LATE."

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"THE DELIGHT AND TERROR OF THE WAITERS."

never failing in amusement and, of course, never repeating themselves.

Such men are noted, however, even in their own class. Their imitators are seldom successful. Naturally, the weaker brother is forced to pure invention for his material, and it is not easy to invent pure and sparkling humor. Consequently there is the class of story-tellers which avoids humor and deals with the serious and horrific. Their fearful experiences, however, are generally reserved for telling outside the circle of the troupe, for every member of the troupe is perfectly familiar with the birth, parentage, and life history of every other member, and fictitious adventures will not be accepted by those who know them as such, with that delightful interest which is the *raconteur's* sole reward. It is when this actor mingles with the outer world that he shines.

One story, while famous through all theatredom, I think has never been printed.

Six years ago Maurice Barrymore wrote for Stuart Robson the scenario of a play, which that comedian thought very fine, and asked Barrymore to finish as soon as possible. This was the last that Robson ever heard of the matter. "Gus" Thomas, who was a great admirer of Barrymore's talent, has sorrowed over this, and frequently reproves his friend for his waste of time. One night before a number of actors he said:

"Barry, you are too frivolous for a man of your ability. What you want in order to bring you down to earth and make you serious and ambitious is to have a great personal sorrow in your life."

"Well," said Barry, "why don't you write me a play?"

Perhaps if it were generally known what the actor has to put up with in the hotels, in the one-night stands, his mental weaknesses and failings would be forgiven him. When he gets a hotel that has decent sleeping rooms, the food is bad. When the food is not bad in itself, it is badly cooked. When it is not badly cooked, it is served cold.

It is the annoyances and disappointments, to say nothing of the downright hardships of travel, that, as stated, bring out both the worst and the best that is in the men. The women in the troupe, tradition to the contrary notwithstanding, are almost invariably patient and even-tempered under all conditions and trials. The men may be in any frame of mind, from hilarious gleefulness to the positively savage. Perhaps the tone most frequent under trials may be described as that of bitter calm. I recall sitting opposite a prominent comedian at dinner one night, in K—— a southern town, where the inhabitants live on corn in the summer time and on sick Yankees in the winter. It was a fine big building, beautiful architecture, the negro waiters in immaculate evening dress—and, of course, the food was abominable.

The waiter put a large empty plate in front of X—— and spread out around it (forming a complete semi-circle) a half-dozen dishes, like tiny bath-tubs, in which there was everything, from salad to plum pudding.

"What's this?" said X——, poking a purplish mass in one of the little bath-tubs with his fork.

"Them's cold pigs' feet, sah," said the waiter pompously.

"Cold pigs' feet, eh?"

"Yes, sah."

"Well, did you ever see cold pigs' feet fly?" innocently.

"Fly! No, sah," somewhat—"they can't fly."

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"Well," said X——, "how do you know?"

"Ah don't known, Cap'n, ah just think so."

"But you don't *know?*"

"No, sah."

"Well," and X—— spoke with a great deal of distinctness, "you just take those cold pigs' feet out into the garden, and throw them up in the air, and if they don't fly you'll have positive knowledge of it."

The perplexed darkey took the dish back to the kitchen, eyeing it wonderingly. When he came back X—— was poking away at the yellow-green contents of another bath-tub, a very serious and inquiring expression on his face.

"This is lettuce, isn't it?" he said quietly and in encouraging tones, for the poor waiter was beginning to fear him.

"Yes, sah."

"And this?" pointing to where he had turned the salad over.

"Why, bless ma soul, ef that isn't a fly."

"So it is. Why didn't you tell me that you served flies?"

"Why, er—er. Ah—er didn't know—"

"But you should know," was the imperious reply; "its your business to know. Now take this away and bring me the salad and the fly on separate plates—that's the way I always have my flies served on me."

The theatres in most of the one-night stands are as bad as the hotels, if not worse. The dressing rooms are small and inadequate, badly lit, and either overheated or unbearably cold. Six times out of ten the actor travelling in the South and Southwest dresses either shivering from the cold or almost fainting with the stifling heat. And yet he is expected to go on the stage and give a good performance.

And when he gets up in the morning the actor, if there is time, goes to the barber, who, in these one-night stands, has a curious way of cutting hair by placing a saucer on the victim's head, and then mowing away all that is not covered by the dish. Leastwise this is the way a Kansas hair-cut looks. And then when the barber lathers him furiously he looks up and says faintly:

"Is that Williams' shaving soap you're using?"

"Yes, sir," says the barber briskly.

"I thought so—it tasted like it."

And he leans back and thinks of New York and upper Broadway, his own barber, his home, the little ones and the big ones, the French table d'hote, and a lot of other nice things that grow only between Twenty-third and Forty-second streets.

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# FROM COTTON TO CLOTH IN A SOUTHERN MILL

By GEORGE H. PERRY

(BEING NO. 4 OF THE SERIES "GREAT AMERICAN INDUSTRIES.")

## WITH SOME SIDE COMMENT ON THE INDUSTRIAL QUESTIONS INVOLVED.

DON'T be misled by the sub-title. This is not an "industrial" article; at least, not in that deadly serious sense that is generally associated with columns of statistics and pages of painful facts.

The series of articles in which this is the fourth paper has for its avowed purpose a description of mechanical plants and processes, rather than speculation in sociological, industrial, and economic problems. But when we come to the cotton-manufacturing business in our review of Great American Industries, we cannot ignore certain phases of the matter that are beyond the merely mechanical. Especially if, as in this instance, we go to the Southern States to find a mill to talk about.

Now here is a solemn fact to start with: *One-third* of all the cotton goods manufactured in the United States in the coming year will be the product of mills that are situated south of the Mason and Dixon line. If the immense significance of this statement doesn't strike you at once, compare it with this: Twenty years ago the Southern States manufactured only about one-tenth of the whole output. In 1875 there may have been 100 cotton mills worthy of the name in the South. In 1890 there were 254, in 1900 there are 542. Those are figures that look dead enough on paper, but they simply quiver with industrial life if you will look at them with a little thought. Moreover, the "Manufacturers' Record," an exceedingly accurate and trustworthy authority, says that at this writing there are seventy-seven mills (many of them large ones) actually in the course of construction in the South, and unnumbered others for which sites and capital have been secured and building plans perfected. In one district—a radius of fifty miles around the town of Greenville, South Carolina—fourteen large mills—new ones—are going up.

All this is to show something of the "boom" that exists in Southern cotton manufacture, and to explain why you are taken South in this article rather than to the colossal plant of the Amoskeag Manufacturing Company in Manchester, New Hampshire (the largest cotton mill in the world), or to one of its closer competitors in Fall River or Lowell.

One cotton mill is very like another in general features. The process of manufacture varies very little among a hundred mills. A process that has been in course of development for three thousand years or more might be expected to be close to perfection by this time, and perfection admits of little variation. Machines differ slightly in details; some are faster, some are slower, some are more accurate than others, but each does about the same thing that is done by all others of its class, and each mill arrives at the same result by practically the same series of steps. And so, in describing the process at one mill, we describe that of all mills in something more than a general way.

To begin at the beginning, here is a drawing of a cotton plant ready for harvesting. It is a plant as familiar to one-third of our population as growing wheat is to a Western country-lad. It is as un-

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A COTTON PLANT.

In 1897–98 ten States raised enough of these fluffy "bolls" to sell for $320,000,000 at 5¼ to 6¼ cents a pound.

familiar to another third—probably including the Western lad—as a purple orchid. There may be a half dozen plants in all the world of equal commercial value. There is a story that early West India colonists were annoyed by the rank growth of this plant, and called it a "weed." If that is so, it is a "weed" that the South cultivated in '97 and '98 to the impressive tune of $320,000,000.

Every one of the delicate, silky fibres in the cotton "boll" has a tiny seed attached to its lower end. Nature had the interests of the seed at heart when she attached the floss—the fibre was incidental. But man (originally) wanted the fibre and not the seed, and the separation of the two has occasioned him a great deal of trouble for ages. Cotton was not an especially cheap fabric until Eli Whitney invented his "cotton gin," and settled its place in human economics for all time. That was in 1792. In place of the laborious hand work, and the rough machines that were not much better, the Whitney gin cleared seeds from fibre as easily as you can comb sand from your hair, and in something the same manner. Nowadays the planter preserves both fibre and seeds. The fibre comes to you eventually in the shape of cloth or thread; the seed product may come in any one of several forms; very likely in the guise of "pure olive oil," with a foreign label on the bottle.

In ante-bellum days every large plantation had its "gin house," and most of the larger cotton raisers have them yet, but modernized beyond recognition. There are numbers of "custom gins" scattered through the South, where smaller planters can send their cotton, as the early settlers used to send their corn to the local mill for grinding. Also there are "travelling gins" on wheels, that proceed from place to place and farm to farm, as the travelling thrashing machines go about in a Western wheat district.

When ginned, the cotton is clean and white and free and fluffy. It is then compressed into bales, which are supposed to weigh 500 pounds each. Then it is an article of staple commercial value, and the cotton mills are after it.

The largest Southern consumer of cotton is at present the Pelzer Manufacturing Company, of Pelzer, South Carolina; a remarkable mill, under a remarkable management, and with enough of important and novel features in its plans, methods, and results to deserve an article to itself instead of mere selection as a type. It is not the largest mill in the world; that is the Amoskeag Company, as stated, with its 12,000 looms. It is not even second largest; that place probably goes to the Fall River Iron Works Company (a cotton mill in spite of its name), with its 7,500 looms. But in the third class, and among the leaders of it, stands the Pelzer plant.

Pelzer is a little town on the Saluda River, some twenty miles from Greenville, South Carolina. The Saluda River is dotted with water-powers, and for every

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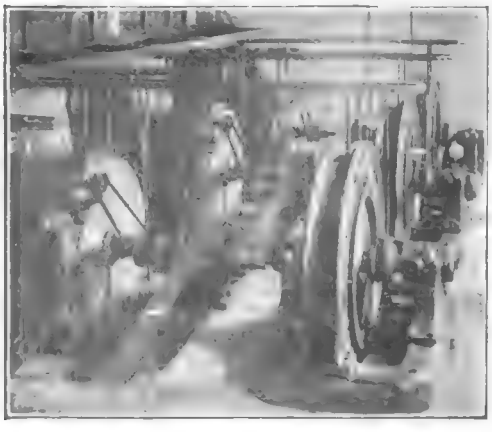
water-power you can generally find a cotton mill built or building. The Pelzer cotton mill was the first in the United States to use electricity as a motive power on a large scale. Its electric installation has been widely copied since its success was announced, but the mill is still the largest consumer of electrical power in America, and with one exception the largest producer of the electric current from water-power in the world. It has two water-powers—one at the very mill itself, the other four miles down the river. At the latter, the water which has already done its work above is used over again to turn dynamos that develop 5,000 electrical horse-power, and that power is conveyed back to the mills by overhead wires. That is enough to show the "up-to-dateness" of the plant, but everything about it is equally new and progressive.

MILL "NO. 4" OF THE PELZER, SOUTH CAROLINA, PLANT.
Driven by electricity generated by a water-power four miles away.

When a bale of cotton goes to the Pelzer mill (or, as a general statement, to any other mill), it is opened and the wadded-up cotton is thrown into a "picker." In this machine, and the two following, through which it is blown and drawn by air currents, it gets thoroughly pulled apart, loosened, shaken up, dusted, and cleaned. It comes out of the third machine (called a "finisher") in a wide, white sheet or web, beautifully thick and soft and downy, hanging together very loosely, but still with sufficient tenuity to allow of its being rolled up on a wide reel. When the reel is full, the machine stops of its own accord, and waits for the insertion of an empty one; a type of the wonderful automatic contrivances that we shall see over and over again all through this highly perfected machinery.



A GLIMPSE OF THE GENERATING PLANT OF THE PELZER COMPANY, SECOND LARGEST IN THE COUNTRY.

This fluffy web doesn't look much like a thread, but a thread it is to be. In that thick, soft, loosely compacted stream that issues from the "finisher" is the substance of many threads, although not so many as you would think to look at it. It is astonishing how much the fibres can be compacted, and how closely they can be twisted together.

The next machine is a "card." More rollers with teeth, but the teeth this time are fine and small, and very closely set. They comb out the cotton into a filmy sheet, and, more important still, they arrange the fibres parallel with one another. The product that issues from the card is a film of cotton so thin as to be almost transparent, and looking more like a flowing sheet of water than like anything else of

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substance. It is perhaps three feet wide. But the flow passes into a funnel, and is compressed into a sort of loose rope of cotton, perhaps an inch in diameter. This is the first vague form of the thread that is to be, and we are less than twenty minutes from the opened bale.

This "rope" of cotton is so soft and loose that you can almost blow it apart with a puff of the breath. It is composed of the cotton fibres very lightly matted together; parallel, but otherwise indiscriminately arranged.

Several hundred yards of this loose rope (a rope without the faintest twist in it as yet) are coiled away by the machine into a huge tin can. The can, with scores of its kind, goes to the "drawing frame." We are but twenty-two minutes from the raw cotton.

The drawing frame takes from four to eight ends of the soft rope from as many cans, and pulls them through a series of rollers. The first pair unites the several ropes, and compacts them firmly into one; that rope goes through the second pair of rollers, which is travelling much faster than the first. The result is a slight pull, which tends to elongate the rope and attenuate it. Four or more of the resultant ropes, now much smaller and harder, are again combined and again drawn, and the final product of the machine is a spool of what looks like yarn, about the size of a lead-pencil, and composed of anywhere from thirty-six to several hundred of the original soft, loose ropes. Thirty minutes from the raw cotton.

A "slubber" now takes up the tale, and the yarn gets its first twisting and some further elongation. This slubber is fifty feet long, and works on several hundred lengths at once. Thirty-five minutes from the raw cotton, and the product begins to look like a large thread or a small yarn.

Then the "speeder," which is in appearance the slubber over again, except that it rolls two of the slubber's threads into one, and puts a harder twist on them. It is the twisting of the thread that locks the fibres solidly together, and makes the product strong and hard. But it isn't thread yet. It is still much too large and too soft. It needs more twisting. It gets it in the "spinning frame." The speeder has been swift—we are at the spinning frame with the cotton we started with in forty-five minutes from the time the bale was opened.

The spinning frame is a machine more than fifty feet long, and to the unfamiliarized eye is composed chiefly of large spools —called "spindles"—that are whirling madly. They are attended by mere children who have acquired a wonderful dexterity. If you look closely at one of the flying spools you can see an almost invisible thread that is being pulled through a series of rollers, and being wound up on the spool as smoothly as a boy can wind a top, but at a terrific speed, and getting a severe twisting by the way. This fine thread is made up of three or four or more of the larger threads from the speeder. It has been drawn and twisted down to the size of coarse sewing-cotton, although without the high surface finish that sewing-cotton possesses. Sometimes the twist is too great or the pull too hard. Then the thread breaks. No damage; the particular spool concerned stops at once; the keen eye of the little boy is on it, he makes some lightning passes with his hands, and the thread is whole again and the spool spinning furiously once more. It takes but a few moments to fill up a spool with what is now a real, hard-twisted thread. Fifty-one minutes from raw cotton.

The spinning-frame spindles when filled are taken to a "spooling" machine, and the thread rewound on real spools, so that the first may go back to the spinner. The new spools go down-stairs and are placed in a mighty rack that holds four or five hundred of them. The four or five hundred ends are brought forward through a "winding frame." This has a wire screen consisting of perpendicular wires only, and between the wires pass the threads. They are thus laid parallel to each other, and very closely together, and in that position are wound as a whole on

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ONE OF THE CARDING ROOMS, PELZER, SOUTH CAROLINA.

a wide reel. It begins to look like a warp, and while we have lost the identity of our original cotton through its enforced intimacy with strangers of its kind, yet we know that it is in that frame somewhere, and could be through it in the course of a half hour or so if a spurt were made.

Take any piece of common cotton cloth, and you will see that it consists of separate threads laid at right angles, and interwoven, under and over, in that position. The longitudinal threads are the "warp." The cross-threads are the "filling." We have seen the warp laid down—the longitu linal threads of the cloth laid parallel. There is nothing to hold them in that position, except that they are tightly wound up on a reel just as they should lie.

Next, here is a "slasher," which unites several of the embryo warps into one that is complete. The direct result of the winding frame is only a part of a warp; it is too coarse and the threads are too widely separated for use. But the "slasher" brings as many together as may be required for the grade of cloth desired, and incidentally starches the threads and dries the starch in the same operation. In the complete warp that results there are (in this case) 2,460 threads, laid parallel in a space of 36 inches.

Two of the reels containing this roll of warp go to a "drawing-in" frame, and here we see the only handwork in the whole process. There is food for reflection in the sight of that sweet-faced cripple who bends over her work at the end of the line of girls similarly employed. She is drawing each separate thread of the 2,460 in each roll through a separate slot in a "harness." A harness is a wooden frame crossed perpendicularly by hundreds and hundreds of wires, or catgut cords. Between each cord the operative draws a thread from the warp. She fills two of the harnesses at the same time, using

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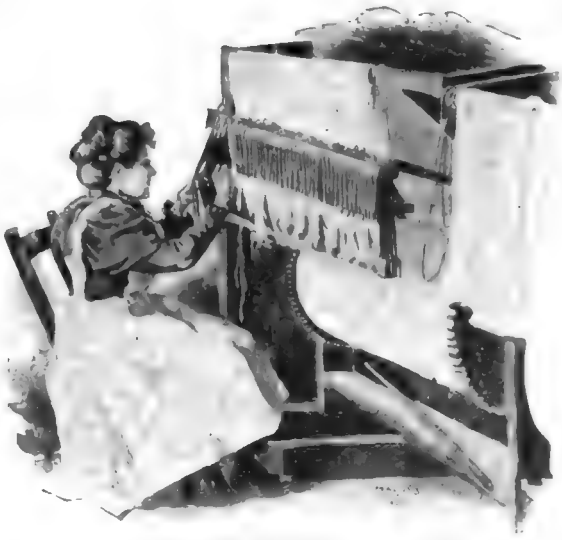
two rolls of warp; *alternate* threads in each harness coming from the same roll. It is a delicate and important operation. It is like steadily threading needles for ten hours a day, and no machine yet devised can do the work. From the crash and dust and confusion of the factory one steps into this room with a positive sense of relief. It is bright and quiet and sunny, and there is here the evidence of keen eyes and deft fingers rising superior to mechanical swiftness and cheapness. These are high-paid work-people, and for this sort of work there is no hint of incapacity in yonder bowed shoulders, nor in the crutches that stick out here and there, in the row of these independent operatives.

Now here are two rolls of parallel threads harnessed. The statement may have no especial interest unless you are curious to know just how cotton cloth may be so firm, so strong, so wearing, and so cheap.



"DRAWING IN."

The only process in cotton manufacture which machinery cannot accomplish.

So far we have the completed warp, in two rolls, each of 2,000 threads or more, each half of which is separately "harnessed." When these go into a loom they are so arranged that each alternate thread is in the same harness. That is to say that one-half of all the warp, consisting of every other thread, is controlled by a different harness than the other half.

Here is the weaving room, and what a crash of shuttles! There are 4,000 looms in this total plant—perhaps 1,000 before our eyes—and each one of them is making a yard of cloth every twenty minutes.

The two rolls of warp, with the two harnesses, are put into position. The loom is a singularly perfected affair that compresses the whole operation into such a small space and under such accurate conditions that one man can attend four or five at once. Watch it work:—

The warp is led through another wire screen, and all its threads, 2,000 or more, brought side by side in just the position they will occupy in the completed cloth. Beyond this screen hang the two harnesses, each carrying one half the warp threads. The loom starts: up goes one of the harnesses, lifting with it *every other* thread of the warp above the level of the rest. "*Slap*" goes a shuttle;—knocked from side to side by vicious whacks from opposing, steam-driven battledores. The shuttle flies between the two halves of the warp, and carries a cross-thread with it. Then the lower half-warp moves up, the upper half becomes the bottom one, and the shuttle flies back again. With one-half the longitudinal threads alternately at top and bottom, and with a cross thread between every alternation, you can see that an in-and-out and under-and-over position is given to every thread in the piece. The loom works fast and surely; a broken thread will stop it, but it seldom stops, and there is cotton sheeting and cotton drill turned out at more than an inch a minute. And this for every one of the 4,000 looms in the plant! There is nothing more to be done than to inspect, approve, fold, and bale the product, and there is cotton cloth of any quality you like turned out within

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two hours of the time the raw material was opened, if necessary.

It seems simple enough. There is not half the fuss and glare and ponderousness of an iron works or a shipyard. Yet that simple cotton fabric that is flowing so smoothly under our gaze means more in money than one can readily figure.

For instance, in 1897–98 the Southern States produced nearly eleven million bales of cotton. And that is very close to three-quarters of the entire cotton consumption of the world. That means money. Three hundred million dollars wouldn't buy it at the lowest price cotton has ever been sold at. All this value is produced in a comparatively limited area, by a comparatively limited class of planters. Right here you must expect figures, and here is a good place to stop reading if you do not wish to be made to consider things.

Call it $300,000,000 as the value of the cotton crop in the Southern States of 1897–98. Who raised it?

More than half of it was raised by "tenant farmers"—white and black. Of this almost inconceivable sum, *more than half* was produced by men who have never seen more than $50 at once in all their lives, and don't see that much oftener than once a year. They work miserable little ten and twenty and fifty-acre tracts in the meanest parts of Texas, Alabama, Georgia, Mississippi, South and North Carolina, and produce the revenues of an empire.

Of these small planters more than half are negroes. The rest are whites, just as poor, just as hard worked, just as squalid, almost as ignorant as the negroes, and not nearly so happy nor so hopeful. The aggregate value of their product equals the revenues of some nations. Who gets the money? Not the planters.

This is not the time nor the place nor is this the medium in which to go into dry-as-dust economic problems. But here's the actual situation, and you can figure on it to suit yourself.

The negro planter, who, in the aggregate, produces something like $80,000,000 every year, and the poor white planter, who, in the aggregate, produces something like $75,000,000 every year, are both in the grip of the "lien system."

The "lien system" is substantially this: The planter without money, but with a farm; needing seed, supplies, machinery, and all the *et cetera* necessaries, has, under the law, the right to mortgage a crop of cotton not actually in existence, but that which he *intends* to raise. He goes to a dealer, gets his supplies, and gives a lien on his *coming* crop for such things as he must have. When his crop is gathered, there comes out of it first the "share" of the owner of the land, which is from one-third to a full half of the total crop. The dealer takes the rest, markets it, deducts his charges, and the planter gets what balance there may be.

Transportation charges are heavy; interest and commissions are heavier yet; the little planter is generally ignorant and credulous—and a $20 bill is often all there is to show for a year's profits.

In this desperate struggle for a living the negro planter has a distinct advantage over the white of the same class, and the white is beginning to feel his competition more and more keenly as the years pass. In a battle like this the victory (albeit a hollow one) is to him who can work the cheaper. The negro can live on less than his white competitor, has fewer wants, generally fewer ambitions, and is willing to work his whole family, from the wife down to the babies, in a way that the white will not or cannot do. The result has been to evolve a phase of "the negro problem" probably unfamiliar to most people. It is only the truth that in this immense agricultural field the negro has been ousting the white, or at least driving him to his final ditch.

Moreover, if the white is driven out of cotton raising, and seeks employment in other lines, he finds a growing competition there also. For, as it stands to-day, the negro in the more progressive of the Southern States is being educated better and more rapidly than the white man, especially in industrial lines. It is admitted that the negro, as a class, is more eager for the education of his family than is the

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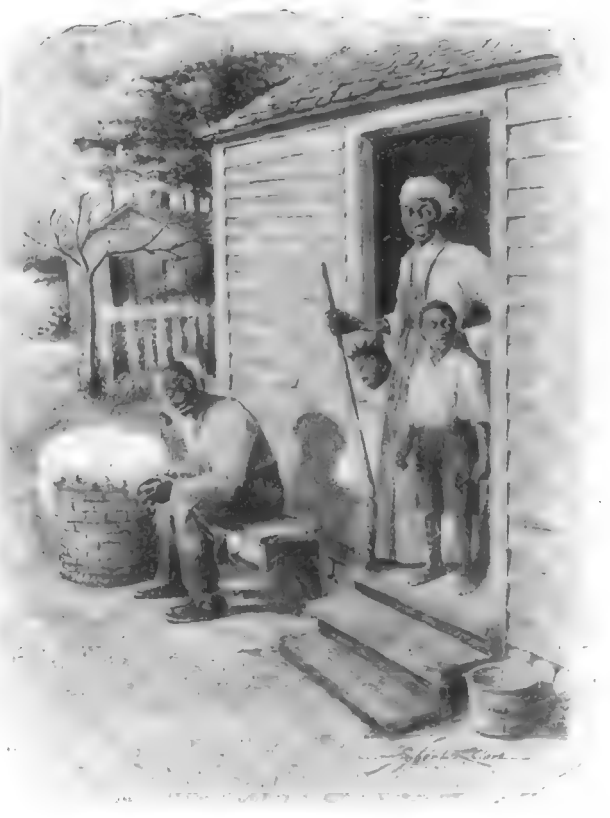
ignorant white. The negro will go farther and endure more for that education, and in some States he actually has better opportunities given him.

Understand, I am speaking of the very poor and ignorant classes of both negro and white. As between these, it is the negro who has been gaining ground the faster, and there is every appearance of an imminent battle of immense seriousness — a battle for existence on both sides — *which will be fought out on industrial lines.* Unless — and here we return to our cotton mill again — there is to be found in such mill towns as that of Pelzer, and in the hundreds of others of its type throughout the South, an answer to the question each race is asking of the other, "*Which of us shall live?*"



"A DAY'S WORK DONE."

A small tenant farmer and some of his assistants.

And that answer, if found, will be, "Both of you shall live, each in his own field"; for here is a sudden and a wonderful impetus in manufacturing. Mills are growing on every hand, and each mill wants operatives. There will be ten thousand more factory hands wanted in the South next year than now, and the movement is only fairly under way. And whence are these hands recruited? *From the white farming class.*

There have been several experiments made with negroes as factory operatives. Not one but has resulted in unequivocal failure. The negro will work hard enough in the field, and he makes a good artisan, but he will *not* work in a factory. He wants more freedom, more air, and the opportunity to loaf occasionally when the whim strikes him.

Now the Pelzer mill, and the Piedmont mill near it, and almost all the larger mills in the South, are conducted under a system unknown in the North. Take the Pelzer mill as a type. The mill itself and the *mill town* itself are under the absolute domination of one man *and that man is a fit one.* No amount of laudation could be stronger than that single characterization. He is supreme, and worthy of supremity. He is the president of the mill corporation, he is also the town government; he is the superintendent of the schools, he is the Board of Works, he is the arbiter of affairs. At Pelzer he is Capt. Ellison A. Smyth. At Piedmont he is Col. James C. Orr; at other mill towns he is other people, but the general system is the same.

The mill corporations own the land on

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which stands the mill town. They do not sell the land to their operatives; they build cottages and rent them for just enough to pay for taxes and repairs. At both Piedmont and Pelzer (the two largest Southern mills) the rent is 50 cents a month for each room. There are four, six, and eight-room cottages. One of the latter can thus be secured for $24 a year.

Each cottage has a little plot of ground for gardening. There is a large common pasturage.

Furthermore, the corporation supplies free schools, and *enforces attendance.* At Pelzer, a family desiring employment in the mill must contract to send their children between the ages of five and twelve to school ten months in the year. The corporation assists in the building of churches; there are five at Pelzer. At that town Captain Smyth has established a free library and reading-room. At Piedmont also there is a large free library. At Pelzer a handsome and commodious auditorium has been built. It would be called the "Opera House" further North. The corporation provides lectures and concerts—generally gratis.

CAPT. ELLISON A. SMYTH.

There are 5,500 inhabitants at Pelzer, almost every one of the adults being employed in the mill. The school has more than 700 children. There are fourteen stores, in the management of which the company has absolutely no concern. These stores are the only things which the corporation does not control.

Holding absolute dominion over the land titles and leases, the company can exclude all that is objectionable from its little industrial Eden, and enforce that degree of restraint that is necessary to a class largely in a transition period. "There are no liquors and no lawyers here," said a resident of Pelzer. No liquors because they are forbidden, no lawyers because there is no need of them. There is no police force for the same reason; the solitary constable at Piedmont and the lonely two at Pelzer being employed chiefly in the enforcement of sanitary regulations.

Within the last few years, most of the mill towns organized under this principle have found it desirable to add to their other movements, in behalf of their operatives, some kind of a savings-bank plan. At Pelzer a regular savings-bank has been organized; at Piedmont, and most of the other towns, there is a system whereby the operative may leave such portion of his pay as he desires in the possession of the corporation, receiving interest thereon. The interest given is higher than in most Northern and Western banks; almost all these mill-town banks allow 6 per cent. per annum. At Pelzer the deposits amount to about $90,000—pretty good for a town of 5,500, inhabited largely by people who scarcely knew what money was until they came there.

And so, as one might think, the operatives in the Southern mills are a fairly prosperous and a decidedly contented class. An evidence of this is that there is no "labor union" among them, and recent efforts to establish such were generally met by vigorous opposition from the operatives themselves. There is a settled conviction among the mill-owners that these efforts

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were fostered—by whom do you think? By professional agitators from the North? Yes, but at whose instance? According to the Southern manufacturers, at the instance and encouragement and expense of Northern mill-owners. And why? Presumably in order to equalize some of the conditions of competition. The Southern mill-owner has no labor union to regard; the Northern mill-owner *has*.

So far as the wages go, there is little difference between the North and South in the amounts paid. Best authorities have reckoned that this difference is considerably less than 10 per cent., the Northern rate being the higher; but that is more than off-set by the low rentals and other advantages enjoyed by the Southern wage-earner. The latter does work longer hours, however.

Now remember that these mill towns at Piedmont and Pelzer are types of similar settlements all through the South, and which are increasing tremendously. Fancy the mountaineer farmer, who has devoted his life to a desperate scratching of the ground for a bare living, with the sight of money but once a year, living on a hundred dollars' worth of meal and bacon for a twelvemonth in a one or two-room shanty —fancy such a man coming to such a town as Pelzer and getting employment. He makes a good operative; intelligent, industrious, and steady. He earns about the same wages per day as the mill-hand of Manchester or Fall River. He gets a better home than he has ever seen before. His children are educated without expense to him; he has the social life, the library and lecture privileges of a Northern city, and in Captain Smyth he has a powerful, liberal, watchful, and experienced friend. What does he care then for the competition of the negro? He is in a field upon which the negro cannot and does not wish to encroach. Let him raise cotton to his heart's content, and as cheaply as he pleases.

Both sides are suited; and—is the question answered?

The next ten years will tell. As it at present appears, the next five years will show the South the leader in cotton manufacture. Ten years of growth of such plants as those in operation at Pelzer and Piedmont ought to make the terms "poor white planter," "white tenant farmer," and "poor white trash" disappear from the Southern vocabulary, and with them a troublesome problem.

THE SCHOOL-HOUSE, PELZER.

Built and maintained as a free school for children of mill operatives, by the mill corporation, which, to further encourage the education of its juvenile tenants, pays ten cents a month to every child who has had a perfect record for attendance.

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# POPULAR BOOKS OF THE MONTH.

A CAREFUL canvass of the leading booksellers results in the compilation of the following list of books that have proved themselves most popular during the past month, as judged by the number of copies sold·

| TITLE | AUTHOR | PUBLISHER AND PUBLISHER'S PRICE |
|---|---|---|
| To Have and to Hold, | Mary Johnston | (Houghton, Mifflin & Co., $1.50). |
| Red Pottage, | Mary Cholmondeley | (Harper & Bros., $1.50). |
| The Light of Scarthey, | Egerton Castle | (The Macmillan Co., $1.50). |
| Richard Carvel, | Winston Churchill | (The Macmillan Co., $1.50). |
| Young April, | Egerton Castle | (The Macmillan Co., $1.50). |
| Janice Meredith, | Paul Leicester Ford | (Dodd, Mead & Co., $1.50). |
| A Gentleman from Indiana, | Booth Tarkington | (Doubleday & McClure Co., $1.50). |
| David Harum, | Edward Noyes Westcott | (D. Appleton & Co., $1.50). |
| When Knighthood Was in Flower, | Edward Caskoden | (Bowen, Merrill & Co., $1.50). |
| The Market Place, | Harold Frederic | (Frederick A. Stokes Co., $1.50). |
| The Trail of the Sand Hill Stag, | E. Seton-Thompson | (Chas. Scribner's Sons, $1.50). |
| The Biography of a Grizzly, | E. Seton-Thompson | (The Century Co., $1.50). |
| That Fortune, | Charles Dudley Warner | (Harper & Bros., $1.50). |
| The Autobiography of a Quack, | S. Weir Mitchell | (The Century Co., $1.25). |
| Debts of Honor, | Maurus Jokai | (Doubleday & McClure Co., $1.25). |
| Resurrection, | Leo Tolstoy | (Dodd, Mead & Co., $1.50). |
| Lying Prophets, | Eden Phillpotts | (Frederick A. Stokes Co., $1.50). |
| Captain Dieppe, | Anthony Hope | (Doubleday & McClure Co., 50 cts.). |
| The Rebel, | H. B. Marriott Watson | (Harper & Bros , $1.50). |
| The Judgment of Helen, | Thomas Cobb | (John Lane, $1.50). |
| Bob, Son of Battle, | Alfred Ollivant | (Doubleday & McClure Co., $1.25). |
| In Connection with the De Willoughby Claim, | Frances Hodgson Burnett | (Chas. Scribner's Sons, $1.50). |
| Prisoners of Hope, | Mary Johnston | (Houghton, Mifflin & Co., $1.50). |
| Via Crucis, | F. Marion Crawford | (The Macmillan Co., $1.50). |
| Loyal Hearts and True, | Ruth Ogden | (Frederick A. Stokes Co., $1 50). |
| Joan of the Sword Hand, | S. R. Crockett | (Dodd, Mead & Co., $1.50). |
| Ben Hur, | Gen'l Lew Wallace | (Harper & Bros., $1.50). |
| The Grip of Honor, | Cyrus Townsend Brady | (Chas. Scribner's Sons, $1.50). |
| Robert Tournay, | William Sage | (Houghton, Mifflin & Co., $1.50). |
| A Man's Woman, | Frank Norris | (Doubleday & McClure Co., $1.50). |
| The Love of Parson Lord, | Mary E. Wilkins | (Harper & Bros., $1.25). |
| By the Marshes of Minas, | Charles G. D. Roberts | (Silver, Burdette & Co., $1.25). |
| A Manifest Destiny, | Julia Magruder | (Harper & Bros., $1.25). |
| The Strength of Gideon, | Paul Laurence Dunbar | (Dodd, Mead & Co., $1.25). |
| Fisherman's Luck, | Henry Van Dyke | (Chas. Scribner's Sons, $2.00). |

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# Close to Perfection

The Fit for a Queen TRADE MARK "ULTRA"

## $3.50 ULTRA SHOE for women.

It is not very hard to make a nearly perfect shoe. It *is* hard to find a manufacturer who makes all his shoes equally perfect, and will not yield to the temptation to "slight" the shoe for larger profit. We base our hope of profit on the perfection of the Ultra Shoe, satisfied that if you try a pair you will appreciate its superiority and become one of our patrons. We are paying for this advertisement to let you know our intention and persuade you to make the trial. We know you will find the shoe close to perfection and will want more like it. The dainty tan Summer shoe shown here is of unique, graceful and stylish pattern and can be obtained by ordering "No. 613" from any of our dealers. If your dealer has not got them write us giving his address.

***Our handsome Catalogue will be sent you free.***

**MOORE-SHAFER SHOE MFG. CO., 195 Main St., Brockport, N. Y.**


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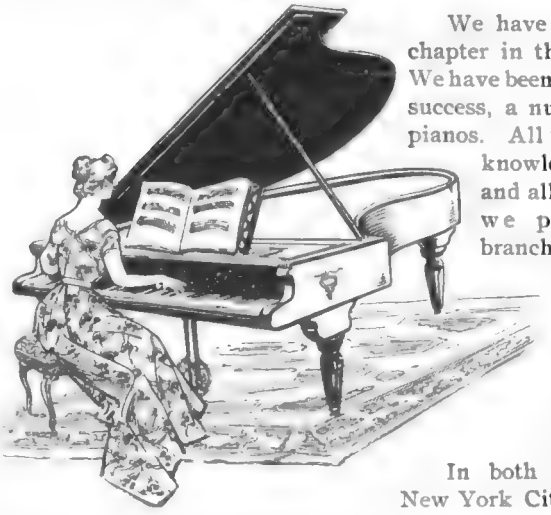
## A NEW EVENT IN THE PIANO BUSINESS



We have started on a new chapter in the piano business. We have been selling, with high success, a number of excellent pianos. All the energy, all the knowledge, all the power, and all the principle that we put into other branches of our business will be put into this piano branch. We do not do things by halves, and we shall have no half-way methods in this.

In both Philadelphia and New York City, we have taken over the exclusive representation of

### The World-Famous Chickering Piano

Nobody who knows pianos at all, requires any description or laudation of the Chickering make. And of the people who do not know pianos, there are probably very few who are not familiar with at least the *name*. For seventy-seven years this make has been before the public, and always as a leader. The history of the Chickering piano is practically the history of modern piano making.

From this date no Chickering pianos can be obtained in New York City, in Philadelphia, or in the immediate vicinity of those cities, except through us.

We shall also carry out such other of the arrangements between the Chickering agencies formerly in those cities and the public at large as the demand necessitates. Tuning orders, orders for instruments for concerts and public use, and arrangements for exchange will be executed by us.

(*Continued on next page.*)

**JOHN WANAMAKER, NEW YORK CITY**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*The Wanamaker Store*

## PIANOS.—*Continued*

But the Chickering is not the only piano we shall handle. It was more than a year ago that our New York store announced the acquisition of the New York representation of the Krell pianos. These instruments are not so well known (at any rate, in the eastern part of the country) as the Chickering, but they are pianos that we are glad to control, and worthy of association with the best.

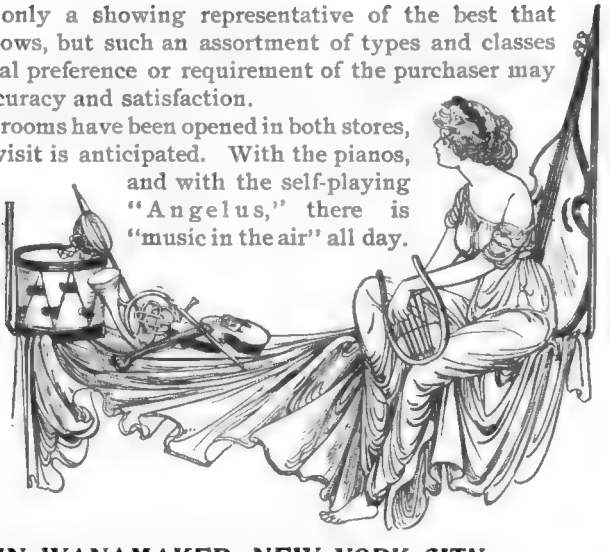
The Krell piano is shown in a number of styles, and the "Royal" piano, made by the same firm, will interest everyone who desires a thoroughly reliable instrument at a minimum price. As you find it here, there need be no question as to it worthiness, and a low-priced piano that can be absolutely depended upon is a piano worth knowing.

The Vose and Crown makes are also represented. Thus, with the

**Chickering, Krell, Vose, Crown and Royal Pianos**

we have, not only a showing representative of the best that the country knows, but such an assortment of types and classes that the especial preference or requirement of the purchaser may be met with accuracy and satisfaction.

New music rooms have been opened in both stores, to which your visit is anticipated. With the pianos, and with the self-playing "Angelus," there is "music in the air" all day.



A Catalogue of Pianos and the accessories will be mailed upon request.

**JOHN WANAMAKER, NEW YORK CITY**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## THE WANAMAKER STORE

### A COUNTRY-WIDE TAILORING BUSINESS FOR MEN

We had our first experience as merchants in the making and selling of men's clothing. That was close to forty years ago, and we have been making clothing and selling clothing and learning about clothing ever since.

We have always been leaders in the tailoring business, because we did more of it than most tailors, and thereby gained those advantages in matters of cost, which always mean advantages to our customers in the matter of price. Moreover, we have certain very rigid ideas as to how the business should be conducted, and those ideas, by proving successful, have proved themselves right.

In our New York and Philadelphia stores we conduct a tailoring business for men. The business has grown so fast that lately we began

### To Extend Our Tailoring Stores All Over the Country

On following pages you will find a list of our agencies. At any of these you will find the same advantages that we could give you in either of our metropolitan stores. Some of the reasons that we have for expecting your business are these,—

**First,** *as to Material.* We aim to give absolutely first-class tailoring service at the lowest price for which it can be turned out. But above all things, we hate and distrust "shoddy" goods to work on. And we do not carry them. You can absolutely rely upon the following statement:—

Every piece of goods shown in our tailoring stores and called woolen, is of *pure wool.* Not one thread of cotton will be tolerated.

*(Continued on next page.)*

**JOHN WANAMAKER, NEW YORK CITY**




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*The Wanamaker Store*

## TAILORING FOR MEN.—*Continued*

You probably know that many cloth-makers call goods "all-wool" that are really half cotton. And many cloth-makers and clothing dealers of high standard call goods "all-wool" when there is not more than ten per cent. of cotton in them. That is not our way. We are not satisfied with a ninety-per-cent. truth. The materials we show will be *all* wool in truth, when they are called wool at all.

Again, matters of dyeing and capacity for wear are things that are watched by us even more carefully than you could. If our agent tells you that the cloth will wear, *it will wear.* If he tells you that the color is fast, *it is fast.*

**Second,** *as to Styles and Making.* We are in the closest possible touch with all authentic sources of fashion. We watch them as carefully in the interests of men as we are famous for doing in the interest of women. The styles of our garments for men can be accepted without hesitation as being correct and *in good taste.*

The making—that is, the workmanship on the garments—will speak for itself. We have been thirty years learning to know "good tailoring" and we will give it to you in every garment we make for you.

**Third,** *as to Prices.* We do not wish to be classed with "cheap" tailors in the offensive sense of that word. But we are in a position to offer you first-class work and materials *at the lowest price for which they can be obtained in this country.* All the masterful power which we can and do exercise in our buying, all the experience of forty years, and all the advantages of knowledge and capital will go to the lessening of cost.

*(Continued on next page.)*

**JOHN WANAMAKER, NEW YORK CITY**



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## *The Wanamaker Store*

**This is a list of our agencies as constituted to date. More are being opened from week to week. See if there is one near you. At all times there will be displayed at these stores complete lines of goods and styles for men's garments for all purposes in the very best that fashion approves.**

**New York**

ALBANY—Jos. Gilbert
AMITYVILLE—Gustave Fishel
AMSTERDAM—Richard Lindsay
BALDWINS—W. H. Raynor
BINGHAMTON—Chas. H. Losee
CENTRAL ISLIP—
Fred'k O. Weldon
CHAMPLAIN—
W. H. Doolittle & Co.
COBBLESKILL—R. B. McDonald
DAVENPORT—L. E. Golden
DELHI—W. G. Parselles
ELLENVILLE—F. J. Potter
FRANKLIN—Abraham Bush
HOOSICK Falls—H. H. Archibald
ITHACA—Frank Hendricks
KINGSTON—Geo. B. Merritt
LISLE—E. N. Sparrow
MECHANICSVILLE—David Vines
NEWARK—C. H. Burch
OLEAN—L. W. Dresselman
ONEIDA—L. D. Gibson
PEEKSKILL—E. W. Dye
PORT JERVIS—Albert Ewart
PORT EWEN—Chas. Card
ROME—Doll M. Neiss
SCHENECTADY—Emmet Lee
SENECA FALLS—A. Goodman
Southampton—S. A. Simons
TROY—O'Brien & Molloy

**Ohio**

AKRON—Canyard & Wood
ALLIANCE—
Winner, the O. K. Clothier
DAYTON—W. H. Broadnax
FOSTORIA—Wm. J. Wagner
HUDSON—Chas. M. Buss
RACINE—W. A. Ellis & Co.
SANDUSKY—M. Lebensburger
ST. CLAIRSVILLE—P. Troll & Sons
XENIA—G. A. Thompson
ZANESVILLE—Willard Still

**Pennsylvania**

BENNETT—S. J. Glover
BUTLER—L. H. Hilliard
CONNELLSVILLE—J. R. Beatty
FRANKSTOWN—J. A. Gold
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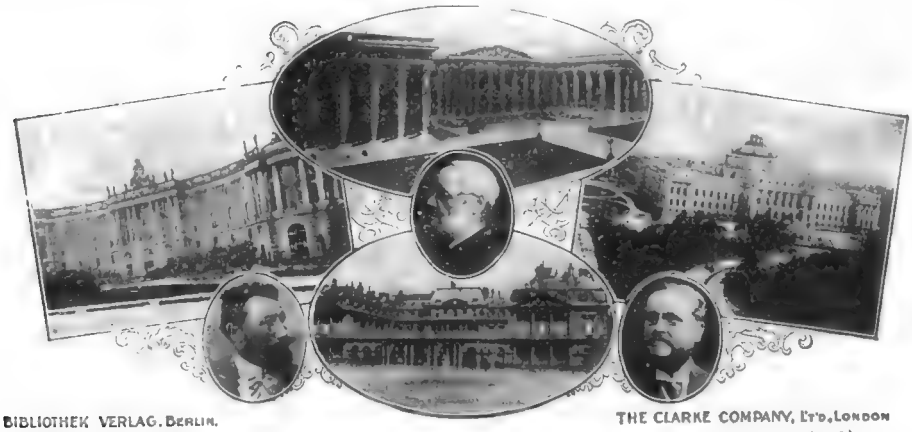

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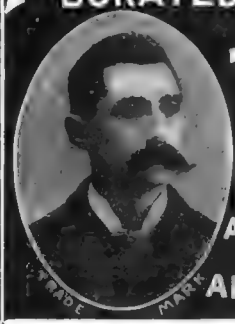


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# FLAKED RICE

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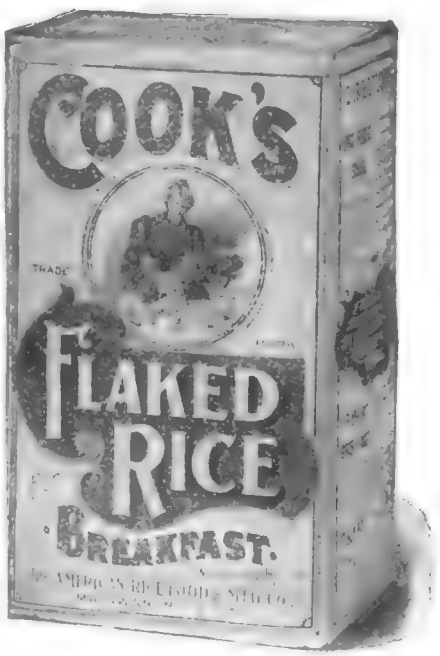


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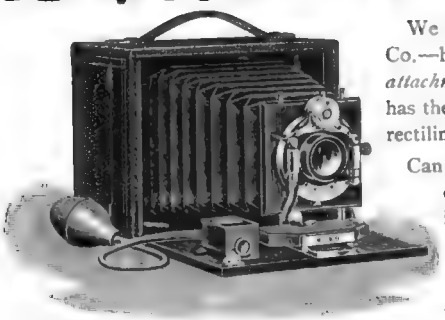

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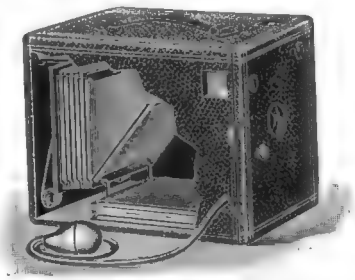

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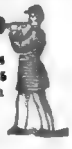

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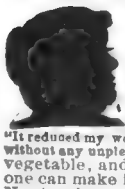

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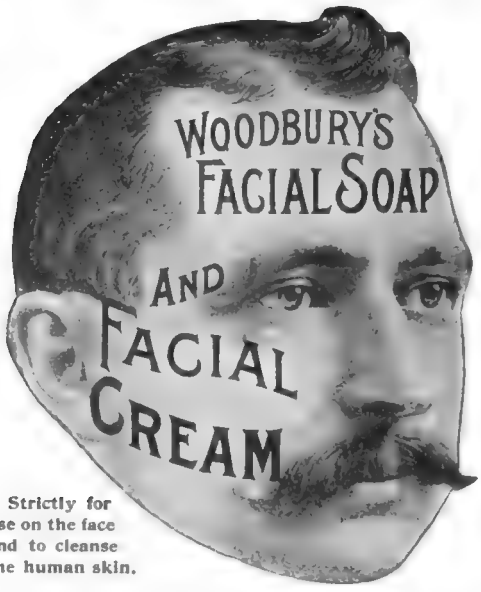


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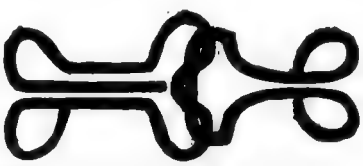

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**Midnight Mountaineering**
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***It 's all in the lens,*** and the

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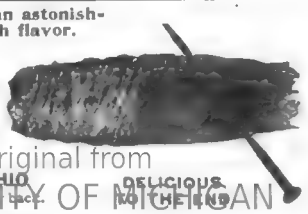

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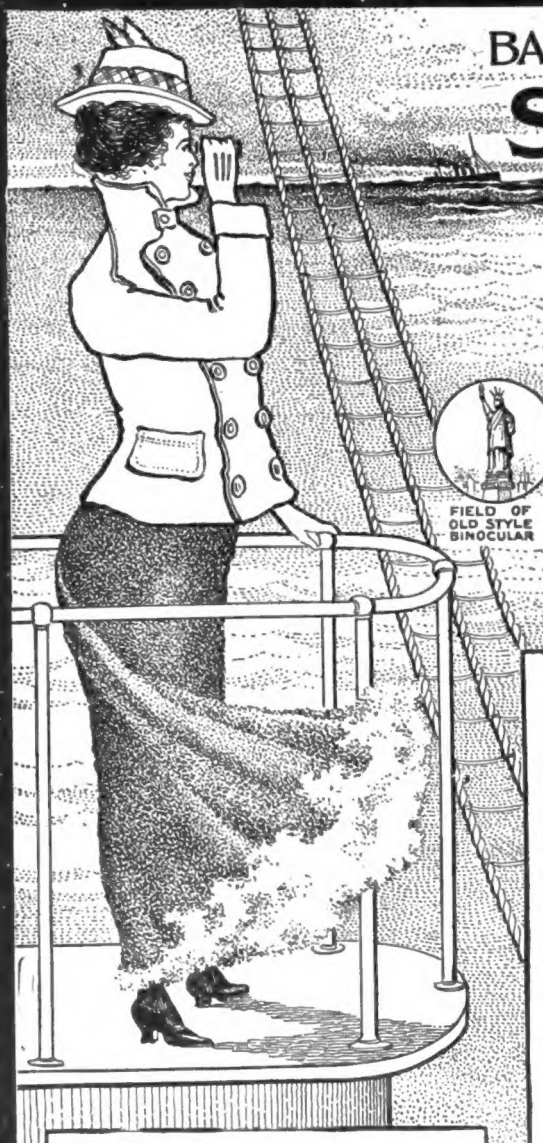



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# DEFENDER M'F'G CO.

## Sheets AND Pillowcases

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***Our goods are all measured after they are hemmed and finished—NOT BEFORE***

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A popular and well-known brand. This brand of sheets and pillow-cases is in universal use, and for all ordinary conditions is the most popular and economical.

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# THE PIANOLA

## IS AN INSTRUMENT BY MEANS OF WHICH *ANY ONE* CAN PLAY THE PIANO

The Pianola is bringing into use thousands of pianos that have been silent for many years.

The claims made for the Pianola are marvelous—so also are the endorsements it has received from the great artists.

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The Pianola looks like a small cabinet. It has small felt-covered fingers that rest on the keys of the piano, and operated by pneumatic power, strike the keys with a pliant, yielding, and remarkably sympathetic touch that is almost identical with that of the human fingers.

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The Pianola can be used in connection with any piano and does not in any way mar or disfigure the instrument. It can be easily and quickly adjusted by any one.

THE DISTINCTIVE feature of the Pianola is that it satisfies the artistic demands of the musically cultured.

THE EXPRESSION is controlled by the player; the rendition has therefore a musical personality, the same as when played by human fingers.

THE PIANOLA is making players of people who, lacking musical training, had never expected to experience the pleasure of producing music for themselves.

IT IS increasing the repertoire of amateur and professional pianists by making the entire literature of the piano instantly available without study and without practice.

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